

# State of Michigan

## Department of Technology, Management & Budget

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Information, Communications and Technology (ICT) Strategy Technical  
Advisory Services

Prepared for:



Appendix to Deliverable A — Current-State Assessment  
20 January 2012

# Appendix A

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## Job Skills Inventory

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## Executive Summary

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# Objectives and Goals

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## ■ Objectives

- Inventory current skill and competency capabilities by job families:
  - Provide a skills inventory for 1,544 IT workers who are in one of 21 different job family functions
  - Preserve the anonymity of all participants and their inventory results.

## ■ Goal

- Enable the State of Michigan to create a high-performing workforce:
  - Identify gaps that need addressing through hiring and professional development
  - Focus talent management efforts in the those areas with the largest gaps.

# Skills Inventory

## Key Observations: Overall Skills

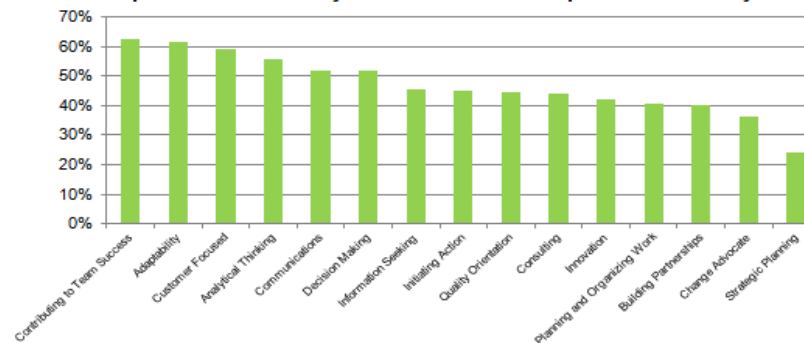
- DTMB's skill proficiency levels are higher than Gartner's industry benchmark data.
- As a rule of thumb an IT organization should have 30% of critical skills at "Advanced" or "Master" levels. DTMB is at 38%, which indicates an above average overall skill maturity level.

**Industry Benchmark Skill Proficiency Comparison**

	% of Skills at Each Proficiency Level				
	Limited	Basic	Intermediate	Advanced	Master
DTMB	6%	19%	37%	31%	7%
Public	8%	23%	35%	29%	6%
Private	7%	23%	38%	28%	5%

- IT staff stronger in competencies associated with performing IT work and weaker in competencies associated with business alignment.

**Competencies Ranked by % of Individuals at Expected Proficiency**



# Skills Inventory

## Key Observations: Staffing Levels

- Job Family information, as collected by the survey, show that DTMB's job role distribution is typical to industry, but the Desktop Support job family counts appear low.
- Current DTMB titles are not meaningful in that Job titles do not accurately describe what people do.
- DTMB has lower staffing levels in Client and Peripheral Support, Voice Network and Data Network as compared to Gartner's IT Key Metrics Data for State and Local Governments.
  - Lower percentage in Voice and Data Network are the result of the State outsourcing network and telecommunications services.
- There is no clear explanation of why Desktop Support numbers are lower in the DTMB survey. People may have misclassified themselves, or the people who did not take the survey tended to be desktop support personnel.

Technical Domain	DTMB Job Families in Skills Inventory (IT Leadership Distributed Across all Job Families)	IT Key Metrics Staffing Distribution	State of Michigan Staffing Distribution
Data Center	Computer Operations, Release Management, Quality Assurance, Systems Administration, Database Administration, Web Administration	16%	21.2%
Client and Peripheral Support	Client Technology/Desktop Support	14%	8.9%
Voice Network	Telecommunications	7%	4.2%
Data Network	Network Management	10%	2.9%
IT Help Desk	Customer Support/Help Desk	10%	7.9%
Applications	Application Development, Business Analysis, Business Intelligence, Database Analysis, Web Design	29%	35.7%
IT Management	Architecture, Business Continuation, IT Security, Project Management, Relationship Management	14%	19.2%

# Skills Inventory

## Key Observations: Capabilities

- DTMB shows the highest level of capabilities in Desktop Support and most infrastructure job families.
- Individuals currently in Relationship Management show lowest capability relative to the other job families. The low marks for Relationship Management probably reflects the newness of the role.
- To quantify the current capabilities of DTMB a qualification score (“Q score”) was calculated for all 1,363 participants. The Q score is based on a combination of an individual’s proficiency in the five competencies and 10 foundational skills associated with the different job families.

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (% HQ+Q)	Rank
Client Technology/Desktop Support	31	38	32	101	68%	High
Web Administration	4	3	5	12	58%	
Quality Assurance	7	4	10	21	52%	
Systems Administration	25	14	43	82	48%	
Application Development	48	78	163	289	44%	
Network Management	6	7	19	32	41%	
Database Analysis	2	3	8	13	38%	Med
Database Administration	14	7	35	56	38%	
Web Design	5	8	22	35	37%	
TeleCommunications	7	8	32	47	32%	
IT Security	2	5	15	22	32%	
Business Analysis	3	13	37	53	30%	
Architecture	3	6	22	31	29%	Low
Business Intelligence	1	3	10	14	29%	
Project Management	12	16	80	108	26%	
Customer Support/Help Desk	4	19	66	89	26%	
Computer Operations	1	12	46	59	22%	
IT Leadership	10	17	96	123	22%	
Business Continuance	1	0	4	5	20%	
Release Management	1	1	8	10	20%	
Relationship Management	2	1	38	41	7%	

# Skills Inventory

## Key Observations: “Bench Strength”

- There exists significant “bench strength” across DTMB. Individuals in different job families have many of skills to perform other roles.
- Each individual was evaluated for all 21 job functions. Table shows the number of FTEs who are in a different role but have strong capabilities in the different job families.
- Because of the need to ensure anonymity, managers did not validate the survey response. DTMB will need to validate skills and identify suitable roles through its regular employee performance management practices.

**Highly Qualified and Qualified FTEs currently in Different Job Families**

Job Family	High Qualified	Qualified	Total
Application Development	43	122	165
Architecture	21	71	92
Business Analysis	37	123	160
Business Continuation	11	50	61
Business Intelligence	29	81	110
Client Technology / Desktop Support	67	144	211
Computer Operations	34	125	159
Customer Support / Help Desk	42	132	174
Database Administration	22	64	86
Database Analysis	44	65	109
IT Leadership	17	66	83
IT Security	20	79	99
Network Management	13	62	75
Project Management	25	87	112
Quality Assurance	49	93	142
Relationship Management	15	48	63
Release Management	23	79	102
Systems Administration	48	107	155
TeleCommunications	22	71	93
Web Administration	25	51	76
Web Design	30	84	114

## Background and Overall Findings Summary

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## Background

### Skills Inventory Methodology — Managing IT Talent

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- Developing a high-performing workforce requires developing both skills and competencies.
- The table below highlights the key differences between skills and competencies:

	Use	Difficulty in Application	Comments
Skills:	Defines “what” I can do	Easier to identify and develop	Necessary for solid performance but does not distinguish top performers
Competencies:	Defines “how” I perform my job	Harder to identify and develop	Underlying characteristics that are required for longer-term success

- DTMB selected 21 job families (e.g., Application Development, Customer Support, System Administration, etc.).
- Gartner used best practice research to recommend a set of 10 foundational skills and five competencies for each job family to evaluate resource capabilities.

## Background

### Skills Inventory Methodology — Managing IT Talent (continued)

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- Gartner conducted a workshop with 11 IT Leaders and Subject Matter Experts (SMEs) to validate/update identified skills and competencies:

Michael Ashton	Scot Ellsworth	Vern Klassen	Rob Surber
Shawn Bauman	Lisa Evani	Judy Odett	Scott Thompson
Dan Conlin	Jack Harris	Carol Sherman	

- Skills inventory was anonymous and voluntary.
  - Gartner did not provide DTMB with any information at the individual level and did not disclose who completed or did not complete survey.
- Employees performed the skill and competency self assessment during November 16th through November 23<sup>rd</sup>.
  - 1,363 employees took the survey — a 87% completion rate.
  - 181 employees did not take the survey.
- Managers did not validate employees' self-assessment.

# Skills Inventory Results Summary

## Industry Benchmark Comparisons

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- DTMB had a 87% completion rate despite being voluntary.
  - Industry benchmark average is 94% completion rate when mandatory.
  - Outstanding achievement by DTMB as Gartner usually sees voluntary skill inventories fail to achieve a high level of participation.
- DTMB survey had 210 skills in 21 skill categories.
  - It was decided to simply the skill inventory because of the time constraints.
  - Typical skill inventory for an organization as complex as DTMB would have as many as 800 skills in 50 categories.
- DTMB averaged 37.3 skills per person
  - Industry average is 81 skills per person.

# Skills Inventory Results Summary

## Industry Benchmark Comparisons (continued)

- For each skill selected participants were asked to assess their proficiency on a five-level scale.
- As a rule of thumb, an organization should have 30% of critical skills at “Advanced” or “Master” levels.
  - The State of Michigan is at 38%, which indicates an above-average overall skill maturity level as compared to our industry benchmark database.

### Industry Benchmark Skill Proficiency Comparison

#### % of Skills at Each Proficiency Level

	Limited	Basic	Intermediate	Advanced	Master
DTMB	6%	19%	37%	31%	7%
Public	8%	23%	35%	29%	6%
Private	7%	23%	38%	28%	5%

# Skills Inventory Results Summary

## Competency Results

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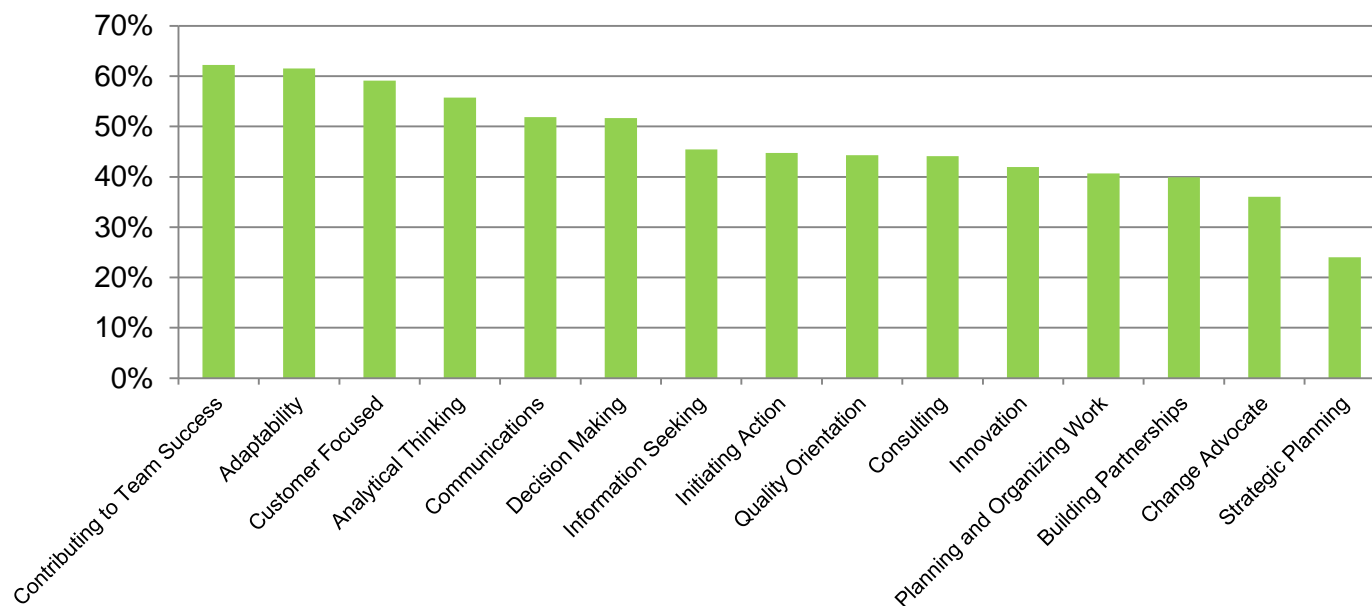
- Fifteen (15) Behavioral and Business competencies were assessed for all individuals. Individuals had to assess themselves on a five-level scale, with an option to select “No Experience” as a sixth option.
- Expected proficiency levels were assigned based on job grade level. More-junior levels had a lower expected proficiency level than more-senior levels.
- DTMB on average had 47% of individuals at or above expected proficiency for competencies.
  - We usually see an average of 30% for organizations who do rigorous manager validation.

# Skills Inventory Results Summary

## Industry Benchmark Comparisons

- The overall results show relative strength for those competencies associated with internal IT work such as “Contributing to Team Success,” and relative weakness for those competencies associated with business alignment and planning such as “Strategic Planning” and “Building Relationships.” This pattern is typical to most IT organizations.

**Competencies Ranked by % of Individuals at Expected Proficiency**



## Findings Summary by Job Family

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## Job Family Analysis

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- It was decided that the focus of skill inventory analysis would be by job family.
- Since DTMB titles do not indicate job family roles Gartner provided a list of potential job families and DTMB chose 21 from our library.
- To determine IT job function the first question asked in the skills inventory was “For your current position, please indicate which area you spend the majority (50%+) of your time?”
- In addition, a participant could select “Other” as their job family if they did not spend 50% of their time in any of the listed job families.
  - It appears that about one-third of the people who choose “Other” have non-IT functions, such as “Storekeeper” and “Executive Management Assistant” or had IT titles that did not fit into our job family structure such as “Radio Communication Technician” or “Microfilm/Scanning Machine OPR.”

## Job Family Counts

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- The following table shows the 21 job families that were selected by DTMB for the survey. The number of FTEs in each job function was determined by the answer to the first question in the survey: “For your current position, please indicate which area you spend the majority (50%+) of your time.”

Job Family	Job Definition	# of People	% of Total
Application Development	Designs, codes, tests, implements and supports application software.	289	21.2%
Architecture	Responsible for enterprise architecture and strategic solutions (Enterprise, Network, Data/Information, Solution, Security).	31	2.3%
Business Analysis	Gathers and designs business requirements.	53	3.9%
Business Continuity	Develops risk management procedures, continuance scenarios and contingency plans for systems and networks to maintain operations during downtime and/or major disasters.	5	0.4%
Business Intelligence	Turns data into critical information and knowledge that can be used to make sound business decisions.	14	1.0%

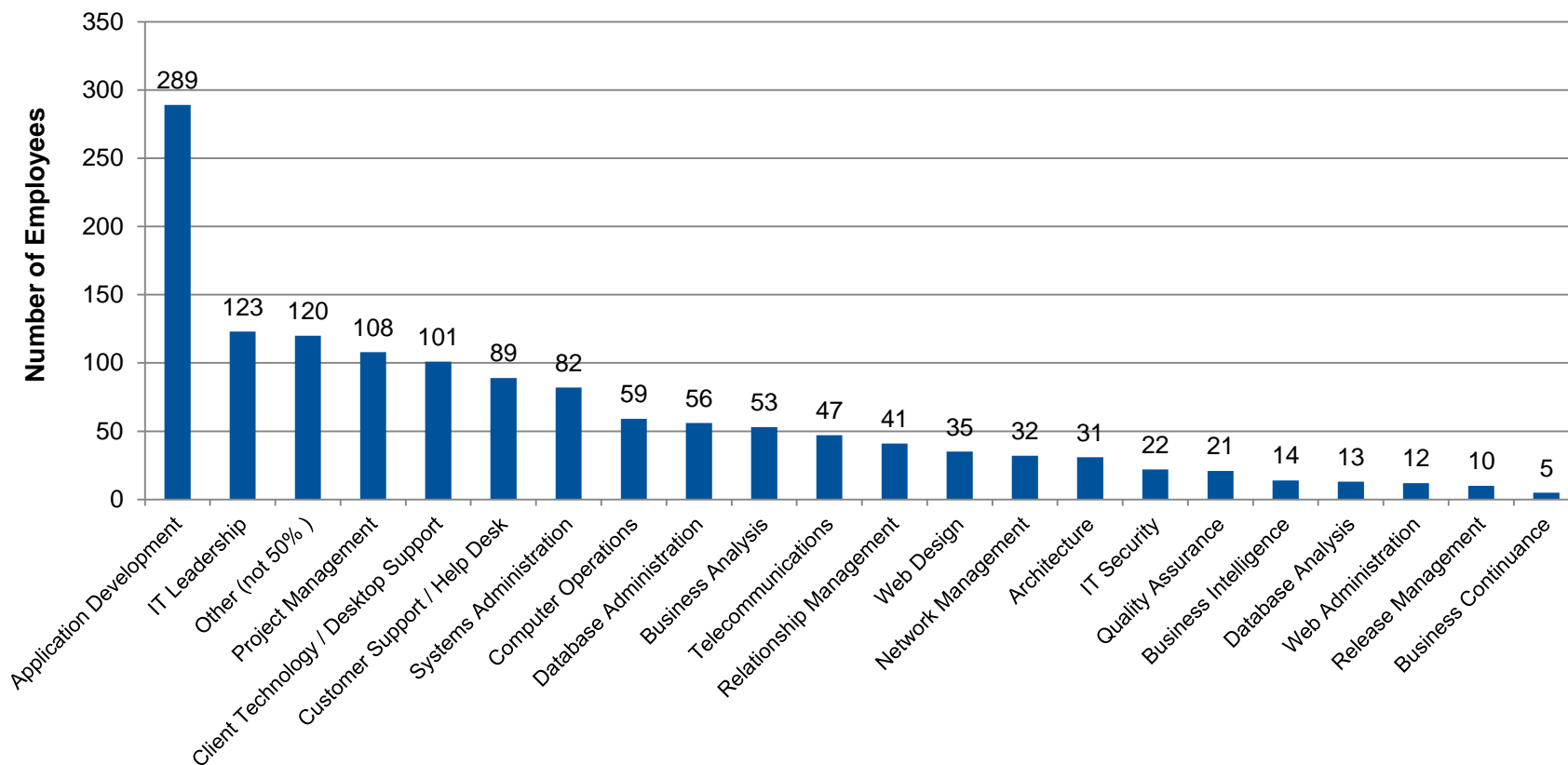
## Job Family Counts (continued)

Job Family	Job Definition	# of People	% of Total
Client Technology/ Desktop Support	Supports ongoing technology needs of all employees/installs and configures all types of personal computing devices and peripherals.	101	7.4%
Computer Operations	Analyzes console messages, diagnoses system failures and takes corrective action in order to ensure continuity of operations, escalating to other technical teams and vendors, as needed.	59	4.3%
Customer Support/ Help Desk	Responds to client requests by diagnosing and resolving problems.	89	6.5%
Database Administration	Installs, maintains and upgrades the enterprise's production databases.	56	4.1%
Database Analysis	Develops database and warehousing designs across multiple platforms and computing environments.	13	1.0%
IT Leadership	Creates the behaviors, structures, systems and competencies required to run the IT organization as an effective, valued partner.	123	9.0%
IT Security	Develops, enforces and audits security policies and procedures.	22	1.6%
Network Management	Analyzes, designs, installs, administers, maintains and troubleshoots network systems.	32	2.3%

## Job Family Counts (continued)

Job Family	Job Definition	# of People	% of Total
Project Management	Responsible for the planning, development and implementation of project efforts that utilize information technology solutions.	108	7.9%
Quality Assurance	Develops and executes formal test plans to ensure the delivery of quality software applications.	21	1.5%
Relationship Management	Works as the strategic interface for business/IT strategy development, solution discovery, service management, risk management and relationship management.	41	3.0%
Release Management	Develops and manages the software migration process from the development to the production environment.	10	0.7%
Systems Administration	Designs, installs, maintains and upgrades the enterprise's systems operating environment.	82	6.0%
Telecommunications	Responsible for the operations and support of an enterprise's telecommunications systems and services.	47	3.4%
Web Administration	Installs, configures, upgrades, monitors and administers web sites and servers.	12	0.9%
Web Design	Designs, develops and maintains web pages and web page content.	35	2.6%
Other	(Does not 50%+ in any of the above Jobs)	120	8.8%

## Number of Employees per Job Family



120 Employees selected “Other” for their job family. This signifies 8.8% of the population who felt that 50% or more of their time was not represented within the 21 job families selected by DTMB.

# Job Family Head Count

## IT Key Metrics Comparison

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- Comparisons were made using Gartner's IT Key Metrics Report for Government — State and Local.
  - The reports contain important database averages from a subset of metrics and prescriptive engagements available through Gartner Benchmark Analytics.
  - These database averages do not account for individual variations of unique competitive landscape, business scale, IT complexity or demand which may be justified by specific business needs.
  - The data should be used as a high-level directional indicator and in the creation of planning assumptions and not viewed as an absolute benchmark.
- DTMB has a lower staffing levels in Client and Peripheral Support (aka Desktop Support), Voice Network and Data Network.
  - Lower percentage in Voice and Data Network are the result of the State outsourcing network and telecommunications services.
  - No clear explanation of why Desktop Support job family numbers are lower. In the benchmark study the level of desktop support is shown to be at industry average.
  - People may have misclassified themselves or the people who did not take survey tended to be desktop support personnel.

# IT Key Metrics Data 2010 Comparison by Technology Domain Framework

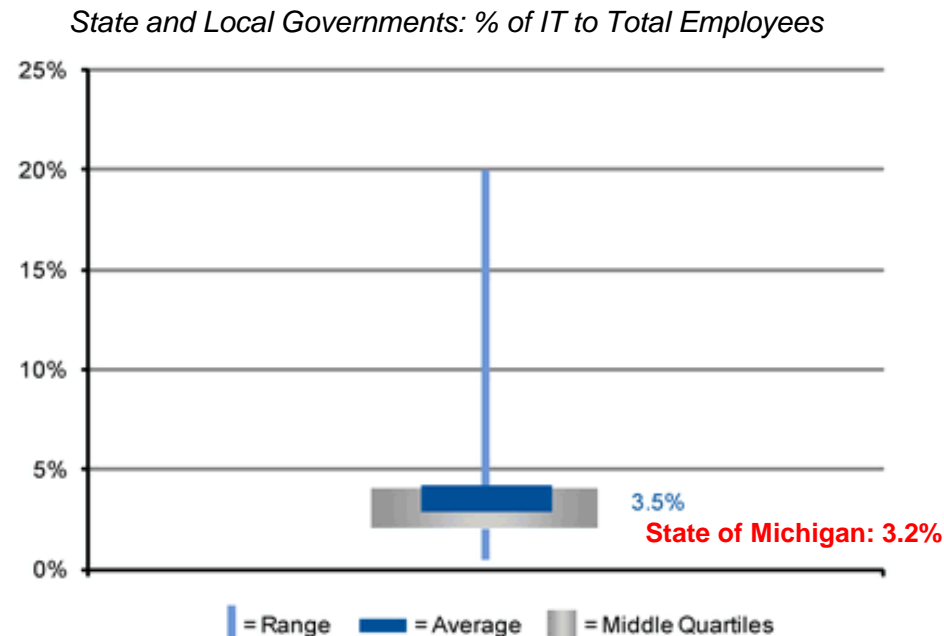
Government — State and Local: Distribution of IT Staffing by Technology Domain

Technical Domain	DTMB Job Families in Skills Inventory (IT Leadership Distributed Across all Job Families)	IT Key Metrics Staffing Distribution	State of Michigan Staffing Distribution
Data Center	Computer Operations, Release Management, Quality Assurance, Systems Administration, Database Administration, Web Administration	16%	21.2%
Client and Peripheral Support	Client Technology/Desktop Support	14%	8.9%
Voice Network	Telecommunications	7%	4.2%
Data Network	Network Management	10%	2.9%
IT Help Desk	Customer Support/Help Desk	10%	7.9%
Applications	Application Development, Business Analysis, Business Intelligence, Database Analysis, Web Design	29%	35.7%
IT Management	Architecture, Business Continuity, IT Security, Project Management, Relationship Management	14%	19.2%

Source: Gartner's IT Key Metrics Data 2011: Key Industry Measures: Government: State and Local Analysis: Current Year  
Published: 17 December 2010

## Government — State and Local: IT Employees as a Percentage of Total Employees

- Total percentage of IT employees to all State of Michigan employees = 3.2%
  - Total IT employees = 1,544
  - Total State of Michigan employees = 47,918 \*
  - \*Source: Michigan Civil Service Commission HWF2, 2011
- Percentage of IT to all employees for SOM is near the average for all state and local governments (3.5%)



Source: Gartner's IT Key Metrics Data 2011: Key Industry Measures: Government: State and Local Analysis: Current Year  
Published: 17 December 2010

## Calculating Overall Resource Capabilities of DTMB

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### Qualification Scores by Job Family

## Calculating Qualification Scores (Q Score)

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- To quantify the current capabilities of DTMB a qualification score (“Q score”) was calculated for all 1,363 participants. The Q score is based on a combination of an individual’s proficiency in the five competencies and 10 foundational skills associated with the different job families.
- An individual may achieve a 100% score if they are at the required proficiency levels for each competency and skill. Higher Q scores indicate an individual is better qualified to perform a role in a given job family. Lower Q scores indicate potential resource gaps.
- Qualification score (Q score) is a weighted average of competency and skill proficiencies:

$$\begin{aligned} &.50 \times \% \text{ of Competencies at required proficiency} \\ &+ \\ &.50 \times \% \text{ of foundational skills at Advanced/Master proficiency} \\ &= \textbf{Q score} \text{ (maximum = 100\%)} \end{aligned}$$

## Calculating Qualification Scores (Q Score) (continued)

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- All individuals in the survey — no matter what their current role is — had Q scores calculated for each of the 21 job families. Q scores are used to show the strength of individuals who currently perform a role as well as potential bench strength of individuals who are in other job families. For example, our bench strength statistics show potential PMs currently performing other job families.
- Based on their Q score, individuals are categorized as either “Highly Qualified” “Qualified” or “Potential” for the particular role.
  - The criterion used is as follows:
    - Highly Qualified = Q score 75% or higher
    - Qualified = Q score between 50% and 75%
    - Less-Qualified = Q score below 50%.
- Each of the 1,363 FTEs who took skills inventory has 21 Q scores to reflect their capabilities in each of the 21 job families.

# Qualification Scores and Strength Indicators

## Currently Performing Job Family Role

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- The table on the next slide shows the distribution of qualification across each job family for FTEs currently in the job family.
- The job functions with 40% + in the Highly Qualified/Qualified are given a strength ranking indicator of “High.” Those job functions which have 30% to 40% of staff in the Highly Qualified/Qualified are given a strength ranking indicator of “Medium.” The remainder are marked “Low.”
- The table shows that DTMB is strongest in Client Technology/desktop Support and weakest in Relationship Management.
- The low marks for Relationship Management probably reflects the newness of the role, but DTMB should review job description to ensure that role follows best practices (see Slide 29).

# Qualification Scores and Strength Indicators

## Currently Performing Role

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)	Rank
Client Technology/Desktop Support	31	38	32	101	68%	High
Web Administration	4	3	5	12	58%	
Quality Assurance	7	4	10	21	52%	
Systems Administration	25	14	43	82	48%	
Application Development	48	78	163	289	44%	
Network Management	6	7	19	32	41%	
Database Analysis	2	3	8	13	38%	Med
Database Administration	14	7	35	56	38%	
Web Design	5	8	22	35	37%	
TeleCommunications	7	8	32	47	32%	
IT Security	2	5	15	22	32%	
Business Analysis	3	13	37	53	30%	
Architecture	3	6	22	31	29%	Low
Business Intelligence	1	3	10	14	29%	
Project Management	12	16	80	108	26%	
Customer Support/Help Desk	4	19	66	89	26%	
Computer Operations	1	12	46	59	22%	
IT Leadership	10	17	96	123	22%	
Business Continuance	1	0	4	5	20%	
Release Management	1	1	8	10	20%	
Relationship Management	2	1	38	41	7%	

# Relationship Management Best Practices

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## ■ Best-Practice Relationship Managers:

- Must report to the IT organization
- Conduct strategic and tactical planning, business analysis and high-level requirement determination
- Have no direct reports
- Often have a non-IT background
- Have their performance based on customer satisfaction
- Communicate regular reports on service performance
- May interface to multiple customer constituencies
- Typically must be “grown” internally
- Represent the person to call in when the customer is unsure how to proceed
- Help customers understand how new/available technology can enable their business viewing outstanding actions with current performance.

## Current Capabilities by Job Families

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### Detailed Analysis

# Current Capabilities by Job Family

- The next slides go into detail regarding each of the 21 job families.

## Current Capabilities by Job Family Application Development

Job Family strength from table on previous page

Strength Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less Qualified	Total HC	Strength (%HQ+Q)
ApplicationDevelopment	48	78	163	289	44%

- Selected foundational skills and critical competencies:

10 foundational skills were identified for each job family. Percentages are the proportion of individuals in this job family who are at Advanced or Master proficiency

10 Foundational Skills (% of FTEs with Adv/Master Proficiency)	% Adv/Mst
Development Tools	53.6%
Implementation (In Relevant Programming Language)	48.1%
Middleware Management (EAI, BPM, Application Servers)	7.6%
Quality Assurance (Software and Architecture Review)	20.1%
Service Oriented Architecture (SOA)	4.5%
Software Support and Maintenance	51.9%
Solution Architecture	12.1%
System Development Methodology	26.3%
Technical Specifications Development	28.4%
Testing	46.0%

Adv/Master > 30% Adv/Master 20% - 30% Adv/Master < 20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Adaptability	7.6%	32.5%	59.9%
Analytical Thinking	9.0%	30.8%	60.2%
Contributing to Team Success	12.1%	24.8%	63.3%
Customer Focused	10.0%	28.0%	61.9%
Quality Orientation	19.0%	34.3%	46.7%

At or Above 60% 40% to <60% Below <40%

5 Critical competencies were developed. Expected proficiencies are based on grade level of the each individual

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	43
Qualified	122
HQ+Q	165

Each individual was evaluated for all 21 job functions. This table shows the number of FTEs who are in a different role but have strong capabilities in this job function

# Current Capabilities by Job Family

## Application Development

Strength  
Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Application Development	48	78	163	289	44%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of FTEs with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Development Tools	53.6%	Adaptability	7.6%	32.5%	59.9%
Implementation (In Relevant Programming Language)	48.1%	Analytical Thinking	9.0%	30.8%	60.2%
Middleware Management (EAI, BPM, Application Servers)	7.6%	Contributing to Team Success	12.1%	24.6%	63.3%
Quality Assurance (Software and Architecture Review)	20.1%	Customer Focused	10.0%	28.0%	61.9%
Service Oriented Architecture (SOA)	4.5%	Quality Orientation	19.0%	34.3%	46.7%
Software Support and Maintenance	51.9%				
Solution Architecture	12.1%				
System Development Methodology	26.3%				
Technical Specifications Development	28.4%				
Testing	46.0%				

At or Above 60% 40% to <60% Below <40%

Adv/Master >= 30% Adv/Master 20%–30% Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	43
Qualified	122
<i>HQ+Q</i>	165

# Bench Strength

## Application Development

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- The table below shows individuals who are rated as “Highly Qualified” in Application Development but are in a different job family.

Current Job Family	Highly Qualified
Architecture	5
Business Analysis	8
Computer Operations	1
Database Administration	5
Database Analysis	1
IT Leadership	4
IT Security	3
Other	2
Project Management	5
Quality Assurance	2
Relationship Management	1
Systems Administration	2
Web Administration	1
Web Design	3

# Current Capabilities by Job Family

## Architecture

**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Architecture	3	6	22	31	29%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Data and Information Architecture	38.7%	Building Partnerships	25.8%	51.6%	22.6%
Enterprise Architecture and Strategic Planning	41.9%	Change Advocate	32.3%	38.7%	29.0%
Governance	25.8%	Consulting	22.6%	48.4%	29.0%
IT Trends & Directions	41.9%	Innovation	25.8%	35.5%	38.7%
Network Architecture	35.5%	Strategic Planning	41.9%	45.2%	12.9%
Product and Vendor Evaluation	35.5%				
Security Architecture	29.0%				
Solution Architecture	41.9%				
Standards, Procedures and Policies	45.2%				
Technical Architecture	58.1%				

■ Adv/Master >= 30% 
 ■ Adv/Master 20%–30% 
 ■ Adv/Master <20%

■ At or Above 60% 
 ■ 40% to <60% 
 ■ Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	21
Qualified	71
<b>HQ+Q</b>	<b>92</b>

# Bench Strength

## Architecture

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- The table below shows individuals who are rated as “Highly Qualified” in Architecture but are in a different job family.

Current Job Family	Highly Qualified
Application Development	8
Database Administration	2
IT Leadership	3
IT Security	3
Network Management	1
Other	1
Project Management	1
Quality Assurance	1
Systems Administration	1

# Current Capabilities by Job Family

## Business Analysis

**Strength  
Indicator:  
Medium**


- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Business Analysis	3	13	37	53	30%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Business Analysis	50.9%	Adaptability	9.4%	30.2%	60.4%
Business Formal Presentations	18.9%	Building Partnerships	17.0%	39.6%	43.4%
Business Processes	32.1%	Communications	11.3%	28.3%	60.4%
Business Requirements Definition	41.5%	Contributing to Team Success	7.5%	26.4%	66.0%
Business Strategic Planning	5.7%	Information Seeking	24.5%	30.2%	45.3%
Cost Benefit Analysis	3.8%				
Enterprise Products/Services	5.7%				
Interviewing	9.4%				
IT Trends & Directions	3.8%				
Quality Assurance (User Testing)	37.7%				

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	37
Qualified	123
<b>HQ+Q</b>	<b>160</b>

## Bench Strength

### Business Analysis

---

- The table below shows individuals who are rated as “Highly Qualified” in Business Analysis but are in a different job family.

Current Job Family	Highly Qualified
Application Development	14
Architecture	2
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
Database Administration	1
Database Analysis	1
IT Leadership	6
IT Security	1
Other	1

# Current Capabilities by Job Family

## Business Continuance




**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:




Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Business Continuance	1	0	4	5	20%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst
BCM Maintenance and Review	40.0%
BCM Policy and Program Management	20.0%
Business Continuity and Incident Management Planning	20.0%
Business Impact Analysis (Scenarios, Interdependencies, Priorities)	20.0%
Business Recovery Operating Strategies	20.0%
Cost Benefit Analysis	20.0%
Develop/Implement emergency response procedures	20.0%
Quality Management	20.0%
Risk Evaluation and Control	20.0%
Training and Awareness	20.0%

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Analytical Thinking	0.0%	20.0%	80.0%
Change Advocate	0.0%	60.0%	40.0%
Information Seeking	0.0%	40.0%	60.0%
Quality Orientation	0.0%	60.0%	40.0%
Strategic Planning	20.0%	40.0%	40.0%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	11
Qualified	50
<b>HQ+Q</b>	<b>61</b>

# Bench Strength

## Business Continuity

- The table below shows individuals who are rated as “Highly Qualified” in Business Continuity but are in a different job family.

Current Job Family	Highly Qualified
Application Development	4
Architecture	3
IT Leadership	2
IT Security	1
Other	1

# Current Capabilities by Job Family

## Business Intelligence




**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Business Intelligence	1	3	10	14	29%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Business Intelligence Platforms (Design, Configuration, Maintenance)	28.6%	Analytical Thinking	0.0%	28.6%	71.4%
Business Process	21.4%	Change Advocate	0.0%	64.3%	35.7%
Business Requirements Analysis	35.7%	Customer Focused	7.1%	0.0%	92.9%
Data Analysis	50.0%	Information Seeking	7.1%	42.9%	50.0%
Data Quality	35.7%	Innovation	0.0%	50.0%	50.0%
Industry Trends & Directions	7.1%				
Online Analytical Processing (OLAP)	14.3%				
Operational Data Stores (ODS)	7.1%				
Query and Database Access Tools	42.9%				
Standards, Procedures and Policies (Security, BI)	14.3%				

 At or Above 60%
  40% to <60%
  Below <40%

 Adv/Master >= 30%
  Adv/Master 20%–30%
  Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	29
Qualified	81
<b>HQ+Q</b>	<b>110</b>

## Bench Strength

### Business Intelligence

---

- The table below shows individuals who are rated as “Highly Qualified” in Business Intelligence but are in a different job family.

Current Job Family	Highly Qualified
Application Development	13
Architecture	2
Business Analysis	1
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
Database Administration	1
Database Analysis	1
IT Leadership	2
IT Security	1
Other	2
Quality Assurance	1
Relationship Management	1
Systems Administration	1
Web Administration	1

# Current Capabilities by Job Family

## Client Technology/Desktop Support

Strength  
Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Client Technology/Desktop Support	31	38	32	101	68%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Desktop Operating Systems	65.5%	Analytical Thinking	5.0%	11.9%	83.2%
Hardware Installation and Support	66.4%	Communications	3.0%	20.8%	76.2%
Mobile Device HW/SW Support	27.3%	Contributing to Team Success	4.0%	13.9%	82.2%
PC/Workstation Hardware Architecture	39.1%	Customer Focused	3.0%	9.9%	87.1%
Performance Measurement and Tuning	17.3%	Information Seeking	7.9%	17.8%	74.3%
Product and Vendor Evaluation	11.8%				
Project Management	15.5%				
Quality Management	10.0%				
Remote Computing	31.8%				
Software Installation and Support	60.0%				

At or Above 60% 40% to <60% Below <40%

Adv/Master >= 30% Adv/Master 20%–30% Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	67
Qualified	144
<b>HQ+Q</b>	<b>211</b>

## Bench Strength

### Client Technology/Desktop Support

---

- The table below shows individuals who are rated as “Highly Qualified” in Client Technology/Desktop Support but are in a different job family.

Current Job Family	Highly Qualified
Application Development	9
Architecture	3
Business Analysis	1
Computer Operations	2
Customer Support/Help Desk	10
Database Administration	2
IT Leadership	3
IT Security	1
Network Management	6
Other	3
Project Management	3
Quality Assurance	1
Relationship Management	1
Systems Administration	20
Telecommunications	1
Web Administration	1

# Current Capabilities by Job Family

## Computer Operations




**Strength  
Indicator:  
Low**




- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Computer Operations	1	12	46	59	22%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Contingency and Disaster Recovery	8.5%	Analytical Thinking	6.8%	30.5%	62.7%
Facilities Management	8.5%	Communications	10.2%	27.1%	62.7%
Peripheral Equipment	5.1%	Contributing to Team Success	8.5%	22.0%	69.5%
Production Control	8.5%	Planning and Organizing Work	13.6%	40.7%	45.8%
Production Scheduling	10.2%	Quality Orientation	16.9%	30.5%	52.5%
Production Support and Documentation	20.3%				
Security Policies and Procedures	5.1%				
Standards, Procedures and Policies	16.9%				
Systems Computer/Console Operations	28.8%				
Workflow Automation	6.8%				

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	34
Qualified	125
<b>HQ+Q</b>	<b>159</b>

## Bench Strength

### Computer Operations

---

- The table below shows individuals who are rated as “Highly Qualified” in Computer Operations but are in a different job family.

Current Job Family	Highly Qualified
Application Development	7
Architecture	1
Client Technology/Desktop Support	2
Customer Support/Help Desk	2
Database Administration	2
IT Leadership	4
Network Management	2
Other	1
Project Management	1
Quality Assurance	1
Release Management	1
Systems Administration	8
Telecommunications	1
Web Administration	1

# Current Capabilities by Job Family

## Customer Support/Help Desk

**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:


Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Customer Support/Help Desk	4	19	66	89	26%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst
Client Server Computing	10.1%
Contingency and Disaster Recovery	1.1%
Data Access and User Administration	16.9%
Enterprise Products/Services	3.4%
Network Administration	9.0%
Security Policies and Procedures	5.6%
Software Support	32.6%
Standards, Procedures and Policies	10.1%
Systems Help Desk Management	13.5%
Systems Security and User Administration	10.1%

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Adaptability	3.4%	15.7%	80.9%
Communications	12.4%	24.7%	62.9%
Customer Focused	9.0%	11.2%	79.8%
Information Seeking	15.7%	21.3%	62.9%
Planning and Organizing Work	20.2%	23.6%	56.2%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	42
Qualified	122
<b>HQ+Q</b>	<b>132</b>

## Bench Strength

### Customer Support/Help Desk

---

- The table below shows individuals who are rated as “Highly Qualified” in Customer Support/Help Desk but are in a different job family.

Current Job Family	Highly Qualified
Application Development	6
Architecture	2
Business Analysis	1
Client Technology/Desktop Support	5
Computer Operations	3
Database Administration	2
Database Analysis	1
IT Leadership	1
IT Security	1
Network Management	4
Other	1
Project Management	3
Quality Assurance	1
Systems Administration	10
Telecommunications	1

# Current Capabilities by Job Family

## Database Administration

**Strength  
Indicator:  
Medium**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Database Administration	14	7	35	56	<b>38%</b>

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst
Data Integration and Loading (ETL, Loading Scripts)	<b>42.9%</b>
Database Backup and Recovery (Replication, Archiving)	<b>64.3%</b>
Database Capacity Planning	<b>46.4%</b>
Database Design	<b>46.4%</b>
Database Implementation	<b>67.9%</b>
Database Monitoring	<b>64.3%</b>
Database Upgrades and Reorganizations	<b>62.5%</b>
Performance Measurement and Tuning	<b>33.9%</b>
Security Policies and Procedures	<b>35.7%</b>
Testing	<b>48.2%</b>

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Adaptability	10.7%	35.7%	<b>53.6%</b>
Analytical Thinking	8.9%	46.4%	<b>44.6%</b>
Contributing to Team Success	10.7%	39.3%	<b>50.0%</b>
Information Seeking	26.8%	41.1%	<b>32.1%</b>
Quality Orientation	35.7%	35.7%	<b>28.6%</b>

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	22
Qualified	64
<b>HQ+Q</b>	<b>86</b>

## Bench Strength

### Database Administration

---

- The table below shows individuals who are rated as “Highly Qualified” in Database Administration but are in a different job family.

Current Job Family	Highly Qualified
Application Development	8
Architecture	2
Business Analysis	1
Client Technology/Desktop Support	1
Database Analysis	2
IT Leadership	3
IT Security	1
Other	1
Systems Administration	2
Web Administration	1

# Current Capabilities by Job Family

## Database Analysis




**Strength  
Indicator:  
Medium**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Database Analysis	2	3	8	13	38%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Data Definition (DDL)	46.2%	Analytical Thinking	15.4%	23.1%	61.5%
Data Integrity and Quality Assurance	46.2%	Communications	38.5%	15.4%	46.2%
Data Manipulation (DML)	46.2%	Customer Focused	7.7%	30.8%	61.5%
Data Modeling	38.5%	Information Seeking	7.7%	46.2%	46.2%
Data Normalization	30.8%	Quality Orientation	23.1%	46.2%	30.8%
Data Security Policies and Procedures	23.1%				
Data Storage, Retrieval or Archival System Requirements	15.4%				
Entity-Relationship (ER) Modeling	23.1%				
Logical Database Design	30.8%				
Relevant Database Development Platform(s)	30.8%				

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	44
Qualified	65
<b>HQ+Q</b>	<b>109</b>

# Bench Strength

## Database Analysis

---

- The table below shows individuals who are rated as “Highly Qualified” in Database Analysis but are in a different job family.

Current Job Family	Highly Qualified
Application Development	18
Architecture	3
Business Analysis	2
Client Technology/Desktop Support	1
Database Administration	11
IT Leadership	3
IT Security	1
Other	2
Relationship Management	1
Systems Administration	1
Web Administration	1

# Current Capabilities by Job Family

## IT Leadership




**Strength  
Indicator:  
Low**




- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
IT Leadership	10	17	96	123	22%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Budget/Finance	19.5%	Building Partnerships	33.3%	48.0%	18.7%
Business Processes	39.8%	Change Advocate	29.3%	54.5%	16.3%
Business Strategic Planning	26.0%	Decision Making	28.5%	47.2%	24.4%
Change Management	41.5%	Initiating Action	30.1%	52.8%	17.1%
Employee Coaching / Career Development	52.8%	Strategic Planning	48.0%	43.9%	8.1%
Employee Performance Management	43.1%				
Governance	24.4%				
IT Planning: Tactical, Strategic	37.4%				
Leadership & Direction Setting	44.7%				
Staffing, Hiring, Selection	56.1%				

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	17
Qualified	66
<b>HQ+Q</b>	<b>83</b>

## Bench Strength

### IT Leadership

---

- The table below shows individuals who are rated as “Highly Qualified” in IT Leadership but are in a different job family.

Current Job Family	Highly Qualified
Application Development	5
Architecture	4
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
Database Administration	1
IT Security	1
Network Management	1
Other	1
Project Management	2

# Current Capabilities by Job Family

## IT Security




**Strength  
Indicator:  
Medium**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
IT Security	2	5	15	22	32%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Data Security	40.9%	Analytical Thinking	18.2%	22.7%	59.1%
Disaster Recovery Planning	13.6%	Change Advocate	22.7%	36.4%	40.9%
Encryption/Decryption Algorithms	4.5%	Consulting	18.2%	31.8%	50.0%
Physical Security	18.2%	Information Seeking	9.1%	36.4%	54.5%
Quality Control (Testing, Auditing)	9.1%	Quality Orientation	22.7%	36.4%	40.9%
Risk Management and Compliance	22.7%				
Security Management (Firewalls, IDS, Virus)	22.7%				
Security Policies and Procedures	31.8%				
Training and Awareness	27.3%				
User Access Management	22.7%				

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	20
Qualified	79
<b>HQ+Q</b>	<b>99</b>

## Bench Strength

### IT Security

---

- The table below shows individuals who are rated as “Highly Qualified” in IT Security but are in a different job family.

Current Job Family	Highly Qualified
Application Development	6
Architecture	2
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
Database Administration	1
IT Leadership	1
Network Management	3
Other	2
Project Management	1
Quality Assurance	1
Relationship Management	1

# Current Capabilities by Job Family

## Network Management

Strength  
Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Network Management	6	7	19	32	41%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Network Architecture	28.1%	Analytical Thinking	3.1%	25.0%	71.9%
Network Capacity Planning	9.4%	Communications	6.3%	37.5%	56.3%
Network Configuration and Implementation	40.6%	Contributing to Team Success	9.4%	15.6%	75.0%
Network Design	34.4%	Information Seeking	6.3%	28.1%	65.6%
Network Diagnostics and Monitoring	34.4%	Quality Orientation	9.4%	34.4%	56.3%
Network Installation	43.8%				
Network Performance Tuning and Troubleshooting	34.4%				
Network Security	25.0%				
Remote Access	25.0%				
Vendor Management	6.3%				

At or Above 60% 40% to <60% Below <40%

Adv/Master >= 30% Adv/Master 20%–30% Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	13
Qualified	62
<b>HQ+Q</b>	<b>75</b>

## Bench Strength

### Network Management

---

- The table below shows individuals who are rated as “Highly Qualified” in Network Management but are in a different job family.

Current Job Family	Highly Qualified
Application Development	3
Architecture	2
Client Technology/Desktop Support	1
Computer Operations	1
Database Administration	1
Other	1
Project Management	1
Quality Assurance	1
Systems Administration	1
Telecommunications	1

# Current Capabilities by Job Family

## Project Management

**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Project Management	12	16	80	108	26%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst
Lead Long Projects (12+ Months)	40.7%
Lead Medium Projects (3-12 Months)	43.5%
Lead Short Projects (1-3 Months)	53.7%
Project Estimating	27.8%
Project Management Institute (PMI)	22.2%
Project Management Tools	30.6%
Project Scheduling	39.8%
Project Scope Management	40.7%
Project Tracking and Reporting	46.3%
Risk Management	29.6%

■ Adv/Master >= 30% 
 ■ Adv/Master 20%–30% 
 ■ Adv/Master <20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Building Partnerships	19.4%	46.3%	34.3%
Communications	8.3%	50.0%	41.7%
Information Seeking	29.6%	43.5%	26.9%
Initiating Action	13.9%	47.2%	38.9%
Quality Orientation	23.1%	46.3%	30.6%

■ At or Above 60% 
 ■ 40% to <60% 
 ■ Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	25
Qualified	87
<i>HQ+Q</i>	112

## Bench Strength

### Project Management

---

- The table below shows individuals who are rated as “Highly Qualified” in Project Management but are in a different job family.

Current Job Family	Highly Qualified
Application Development	10
Architecture	3
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
IT Leadership	5
Relationship Management	2
Systems Administration	1
Telecommunications	1
Web Administration	1

# Current Capabilities by Job Family

## Quality Assurance

Strength  
Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Quality Assurance	7	4	10	21	52%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Acceptance Testing	57.1%	Analytical Thinking	4.8%	42.9%	52.4%
Integration Testing	38.1%	Communications	4.8%	33.3%	61.9%
Quality Assurance Concepts and Standards	47.6%	Contributing to Team Success	4.8%	23.8%	71.4%
Regression Testing	52.4%	Planning and Organizing Work	14.3%	28.6%	57.1%
Systems Testing	52.4%	Quality Orientation	4.8%	19.0%	76.2%
Test Case Decision	52.4%				
Test Performance/Metrics	23.8%				
Test Planning	57.1%				
Testing Methodologies	28.6%				
Testing Tools	38.1%				

■ At or Above 60% 
 ■ 40% to <60% 
 ■ Below <40%

■ Adv/Master >= 30% 
 ■ Adv/Master 20%–30% 
 ■ Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	49
Qualified	93
<b>HQ+Q</b>	<b>142</b>

## Bench Strength

### Quality Assurance

---

- The table below shows individuals who are rated as “Highly Qualified” in Quality Assurance but are in a different job family.

Current Job Family	Highly Qualified
Application Development	22
Architecture	2
Business Analysis	2
Client Technology/Desktop Support	1
Customer Support/Help Desk	1
Database Administration	1
Database Analysis	1
IT Leadership	4
IT Security	1
Other	5
Project Management	4
Relationship Management	1
Systems Administration	2
Web Administration	1
Web Design	1

# Current Capabilities by Job Family

## Relationship Management

**Strength  
Indicator:  
Low**




- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Relationship Management	2	1	38	41	7%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Business Assessment	17.1%	Building Partnerships	26.8%	41.5%	31.7%
Business Case Development	14.6%	Change Advocate	46.3%	29.3%	24.4%
Business Cost Benefit Analysis	7.3%	Consulting	34.1%	39.0%	26.8%
Business Definition Requirements	12.2%	Information Seeking	43.9%	39.0%	17.1%
Business Feasibility Studies	9.8%	Innovation	41.5%	41.5%	17.1%
Business Processes	24.4%				
Business Strategic Planning	12.2%				
Enterprise Products/Services	4.9%				
IT Trends & Directions	7.3%				
Risk Management	4.9%				

 At or Above 60%
  40% to <60%
  Below <40%

 Adv/Master >= 30%
  Adv/Master 20%–30%
  Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	15
Qualified	48
<b>HQ+Q</b>	<b>63</b>

# Bench Strength

## Relationship Management

---

- The table below shows individuals who are rated as “Highly Qualified” in Relationship Management but are in a different job family.

Current Job Family	Highly Qualified
Application Development	4
Architecture	3
Client Technology/Desktop Support	1
Database Administration	1
Database Analysis	1
IT Leadership	3
IT Security	1
Project Management	1

# Current Capabilities by Job Family

## Release Management

**Strength  
Indicator:  
Low**

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Release Management	1	1	8	10	20%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Change Control	60.0%	Analytical Thinking	20.0%	50.0%	30.0%
Configuration Management/Code Management Systems (End User)	70.0%	Communications	30.0%	20.0%	50.0%
Document Management	40.0%	Decision Making	20.0%	60.0%	20.0%
Governance	30.0%	Information Seeking	30.0%	50.0%	20.0%
IT Architecture	10.0%	Quality Orientation	30.0%	40.0%	30.0%
ITIL Foundation Certification	0.0%				
Performance Measurement and Tuning	10.0%				
Project Management	0.0%				
Quality Assurance Concepts and Standards	20.0%				
Relevant Program Languages and Program Scripts (SQL, HTML, etc.)	20.0%				

■ Adv/Master >= 30% 
 ■ Adv/Master 20%–30% 
 ■ Adv/Master <20%

■ At or Above 60% 
 ■ 40% to <60% 
 ■ Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	23
Qualified	79
<b>HQ+Q</b>	<b>102</b>

## Bench Strength

### Release Management

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- The table below shows individuals who are rated as “Highly Qualified” in Release Management but are in a different job family.

Current Job Family	Highly Qualified
Application Development	9
Architecture	3
Client Technology/Desktop Support	1
Database Administration	2
Database Analysis	1
IT Leadership	3
IT Security	1
Project Management	1
Relationship Management	1
Systems Administration	1

# Current Capabilities by Job Family

## Systems Administration


Strength  
Indicator:  
High

### ■ Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Systems Administration	25	14	43	82	48%

### ■ Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Configuration and Implementation	57.3%	Analytical Thinking	13.4%	15.9%	70.7%
Performance Measurement and Tuning	26.8%	Communications	14.6%	20.7%	64.6%
Relevant Operating Systems (Windows, Linux, etc.)	56.1%	Contributing to Team Success	9.8%	18.3%	72.0%
Systems Conversions	30.5%	Information Seeking	15.9%	35.4%	48.8%
Systems Installation & Upgrade	59.8%	Innovation	15.9%	41.5%	42.7%
Systems Production Support	57.3%				
Systems Security and User Administration	48.8%				
Systems Storage Administration/Management	36.6%				
Technology Integration	24.4%				
Vendor Management	17.1%				

 At or Above 60%
  40% to <60%
  Below <40%

 Adv/Master >= 30%
  Adv/Master 20%–30%
  Adv/Master <20%

### ■ Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	48
Qualified	107
<b>HQ+Q</b>	<b>155</b>

## Bench Strength

### Systems Administration

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- The table below shows individuals who are rated as “Highly Qualified” in Systems Administration but are in a different job family.

Current Job Family	Highly Qualified
Application Development	10
Architecture	6
Client Technology/Desktop Support	7
Computer Operations	3
Customer Support/Help Desk	1
Database Administration	4
IT Leadership	3
IT Security	1
Network Management	4
Other	1
Project Management	2
Quality Assurance	1
Relationship Management	1
Release Management	1
Telecommunications	2
Web Administration	1

# Current Capabilities by Job Family

## Telecommunications




**Strength  
Indicator:  
Medium**

### ■ Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
TeleCommunications	7	8	32	47	<b>32%</b>

### ■ Selected foundational skills and critical competencies:

<b>10 Foundational Skills</b> (% of People with Adv/Master Proficiency)	<b>% Adv/Mst</b>	<b>5 Critical Competencies</b>	<b>2+ Levels Below Expected</b>	<b>1 Level Below Expected</b>	<b>At or Above Expected</b>
Communications Hardware	<b>38.3%</b>	Analytical Thinking	8.5%	27.7%	<b>63.8%</b>
Communications Software	<b>23.4%</b>	Communications	14.9%	31.9%	<b>53.2%</b>
Data Networks	<b>21.3%</b>	Customer Focused	12.8%	23.4%	<b>63.8%</b>
Installation (Cabling) and Support	<b>38.3%</b>	Information Seeking	14.9%	38.3%	<b>46.8%</b>
Telcommunications Architecture	<b>14.9%</b>	Quality Orientation	19.1%	25.5%	<b>55.3%</b>
Telecommunications Design	<b>19.1%</b>				
Troubleshooting	<b>57.4%</b>				
Vendor Management	<b>12.8%</b>				
Voice Networks	<b>29.8%</b>				
Wireless Technologies	<b>21.3%</b>				

 At or Above 60%
  40% to <60%
  Below <40%

 Adv/Master >= 30%
  Adv/Master 20%–30%
  Adv/Master <20%

### ■ Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	22
Qualified	71
<b>HQ+Q</b>	<b>93</b>

## Bench Strength

### Telecommunications

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- The table below shows individuals who are rated as “Highly Qualified” in Telecommunications but are in a different job family.

Current Job Family	Highly Qualified
Application Development	3
Architecture	1
Client Technology/Desktop Support	6
Computer Operations	1
Customer Support/Help Desk	1
IT Leadership	2
Network Management	3
Other	2
Project Management	1
Quality Assurance	1
Systems Administration	1

# Current Capabilities by Job Family

## Web Administration

Strength  
Indicator:  
High

- Job Family strength for FTEs currently in this job family:

Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Web Administration	4	3	5	12	58%

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst	5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Client Server Computing	41.7%	Adaptability	8.3%	8.3%	83.3%
Configuration and Implementation	66.7%	Analytical Thinking	8.3%	8.3%	83.3%
Performance Measurement and Tuning	41.7%	Communications	16.7%	33.3%	50.0%
Systems Conversions	25.0%	Contributing to Team Success	8.3%	16.7%	75.0%
Systems Production Support	75.0%	Quality Orientation	33.3%	16.7%	50.0%
Systems Security and User Administration	50.0%				
Systems Security Maintenance	41.7%				
Systems Software Installation & Upgrade	66.7%				
Systems Storage Administration	50.0%				
Systems Storage Management	41.7%				

At or Above 60% 40% to <60% Below <40%

Adv/Master >= 30% Adv/Master 20%–30% Adv/Master <20%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	25
Qualified	51
HQ+Q	76

## Bench Strength

### Web Administration

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- The table below shows individuals who are rated as “Highly Qualified” in Web Administration but are in a different job family.

Current Job Family	Highly Qualified
Application Development	6
Architecture	3
Business Analysis	1
Database Administration	4
Database Analysis	1
IT Leadership	2
IT Security	1
Other	1
Release Management	1
Systems Administration	5

# Current Capabilities by Job Family

## Web Design




**Strength Indicator:**  
**Medium**

- Job Family strength for FTEs currently in this job family:




Job Family	Highly Qualified	Qualified	Less-Qualified	Total HC	Strength (%HQ+Q)
Web Design	5	8	22	35	<b>37%</b>

- Selected foundational skills and critical competencies:

10 Foundational Skills (% of People with Adv/Master Proficiency)	% Adv/Mst
Content Management	48.6%
Design Specifications	42.9%
Human Factors	14.3%
Multimedia	11.4%
Portal Tools, Configuration and Maintenance	20.0%
Programming Code to Specification	40.0%
Software Support	28.6%
Testing	37.1%
User Interface Design (GUI)	42.9%
Web Services Design	17.1%

 Adv/Master >= 30% 
  Adv/Master 20%–30% 
  Adv/Master <20%

5 Critical Competencies	2+ Levels Below Expected	1 Level Below Expected	At or Above Expected
Adaptability	5.7%	34.3%	60.0%
Analytical Thinking	2.9%	45.7%	51.4%
Communications	5.7%	37.1%	57.1%
Information Seeking	8.6%	40.0%	51.4%
Innovation	20.0%	31.4%	48.6%

 At or Above 60% 
  40% to <60% 
  Below <40%

- Bench strength (Highly Qualified and Qualified FTEs currently in other Job Families):

Highly Qualified	30
Qualified	84
<b>HQ+Q</b>	<b>114</b>

## Bench Strength

### Web Design

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- The table below shows individuals who are rated as “Highly Qualified” in Web Design but are in a different job family.

Current Job Family	Highly Qualified
Application Development	18
Architecture	2
Business Analysis	1
Customer Support/Help Desk	1
Database Administration	2
Database Analysis	1
IT Leadership	2
Other	1
Relationship Management	1
Web Administration	1

# Skills Inventory Results Summary

## General Observations

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- The high completion rate, despite voluntary participation, speaks highly of DTMB's leadership change management skills. In previous skill inventories the highest completion rate for a voluntary survey was 37%.
- Like most public sector IT organizations, the State of Michigan IT skills and competency profile tends to be strongest in technology related skills and competencies and weakest in business skills. Most public sector IT organization tend to reward and promote based on technical abilities rather than on business knowledge.
- Most IT organizations — both private and public sector — tend do best in reacting to and solving problems and are weaker in strategic planning. This is exacerbated in many public sector IT organization where a “keeping the lights on” attitude results in lower budgets for IT investment.
- The high percentage of participants who were at expected competency proficiency levels may be caused by a general lack of experience assessing competencies. As individuals and managers become more familiar with competency assessments the scores will tend to go down. The lack of manager validation also contributed to the higher scores for competencies.

## Attachment: Competency and Proficiency Definitions

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## Competency and Proficiency Definitions — Adaptability

**Adaptability:** Maintains effectiveness when experiencing major changes in personal work tasks or the work environment; adjusts effectively to work within new work structures, processes, requirements or cultures. Demonstrates flexibility within a variety of changing situations while working with various individuals and groups. Changes own ideas or perceptions in response to changing circumstances. Alters standard procedures when necessary, and multi-tasks as required.

**Being Developed (BD):** Recognizes and responds appropriately to new or changing situations. Adjusts priorities to meet changing demands. Determines when whether or not others' points of view are reasonable or valid.

**Basic (B):** Listens to others' opinions and acknowledges the value of difference. Maintains flexibility and attempts new approaches as needed to accomplish objectives. Able to multi-task effectively. Adjusts to changing priorities. Readily adopts new procedures and technology.

**Intermediate (I):** Handles multiple projects and duties simultaneously, prioritizing as needed. Devises flexible approaches that are easily adopted by all levels and types of people. Works creatively to respond to a specific situation. Quickly resolves new challenges in a changing environment. Interprets the spirit of a policy to meet business goals and client needs. Respects and responds sensitively to others' reluctance to change. Fosters flexibility through cross-training and developmental work assignments.

**Advanced (A):** Handles multiple projects and duties simultaneously, prioritizing as needed. Devises flexible approaches that are easily adopted by all levels and types of people. Works creatively to respond to a specific situation. Quickly resolves new challenges in a changing environment. Interprets the spirit of a policy to meet business goals and client needs. Respects and responds sensitively to others' reluctance to change. Fosters flexibility through cross-training and developmental work assignments.

**Expert (E):** Handles multiple projects and duties simultaneously, prioritizing as needed. Devises flexible approaches that are easily adopted by all levels and types of people. Works creatively to respond to a specific situation. Quickly resolves new challenges in a changing environment. Interprets the spirit of a policy to meet business goals and client needs. Respects and responds sensitively to others' reluctance to change. Fosters flexibility through cross-training and developmental work assignments.

## Competency and Proficiency Definitions — Analytical Thinking

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**Analytical Thinking:** Able to breakdown raw information and undefined problems into specific, workable components that in-turn clearly identifies the issues at hand. Makes logical conclusions, anticipates obstacles and considers different approaches that are relevant to the decision making process.

**Being Developed (BD):** Gathers and links data. Reviews for non-conformity and gathers further information in response to routine problems. Identifies direct cause and effect relationships. Breaks down tasks and problems into manageable components. Solicits guidance as needed to assess importance and urgency. Escalates issues of a non-routine nature as needed.

**Basic (B):** Collates and reports information. Solicits guidance to define criteria and assign values of importance and urgency. Sorts information in order of importance. Investigates to define problems more accurately. Identifies trends and exceptions. Identifies relationships and linkages between components. Identifies variable potential causes and effects. Escalates issues of an exceptional nature.

**Intermediate (I):** Coordinates the information gathering and reporting process. Reviews trends and compares to expectations. Conducts research to define problems and prepares responses to anticipated questions. Prioritizes multiple issues and opportunities. Identifies relationships and linkages within several information sources. Anticipates issues that are not readily apparent on the surface. Identifies root causes and effects. Defines priorities within performance objectives. Reports and identifies areas that need guidance in order to resolve complex issues. Anticipates the possible outcome of potential solutions.

**Advanced (A):** Determines criteria for assessing issues and opportunities. Establishes clear goals and priorities needed to assess performance. Identifies relationships and linkages between different information sources. Anticipates issues that are not readily apparent on the surface. Identifies root causes and effects. Establishes clear goals and priorities. Anticipates potential problems and develops solutions needed to resolve them. Systemically analyzes relationships between apparently independent problems and issues. Reviews and cross-reviews reports. Identifies trends as well as isolated events. Translates analytical reports into management presentations, and provides guidance to resolve issues. Anticipates the possible outcome of potential solutions. Identifies areas of significant concern or opportunity. Probes and initiates research to identify critical problems.

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## Competency and Proficiency Definitions — Analytical Thinking (continued)

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**Expert (E):** Establishes strategic goals and enterprise-wide priorities. Uses techniques of advanced business and organizational analysis to identify and assess problem definitions and potential solutions, and compares and contrasts them against predetermined criteria. Creates framework for reviewing large volumes of unorganized data. Probes for and points to subtle and unclear relationships in highly complex matters and evaluates the merit of problem definitions and potential solutions. Anticipates the possible outcome of potential solutions. Systemically identifies and resolves complex enterprise-wide issues, while educating senior leaders as to their solution.

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## Competency and Proficiency Definitions — Building Partnerships

**Building Partnerships:** Identifies opportunities and takes action to build strategic relationships between one's area and other areas, teams, departments, units, or organizations to help achieve business goals. Assesses and develops strategies for achieving the needs of internal and/or external clients. Seeks information about and identifies opportunities to support and enhance critical client business functions and processes. Takes part in creating client strategies that supports them in achieving their primary objectives. Integrates the technology strategy into clients' long-range plans and matches business requirements to new, existing or future products and services. Identifies opportunities that add long-term value.

**Being Developed (BD):** In response to requests for new types of assistance, refers representatives of the client to the appropriate IT contact. Gathers information about clients' business and technology products and services. Solicits client recommendations for improved day-to-day functionality and translates simpler recommendations into technical business requirements.

**Basic (B):** Participates or assists in the initiation of mutually beneficial partnerships. Recognizes that other departments or groups can assist in goal attainment; educates self on the functions and capabilities of other areas in the organization. Conducts dialogues about improvements at the project or departmental level. Identifies simple product/service improvement opportunities and creates basic cost/benefit proposals. Provides recommendations to clients regarding enhancements to existing products and services as well as solutions that align with strategic performance drivers. Regularly meets with client representatives to give status reports and maintain records on client activities. Demonstrates respect for the opinions of others.

**Intermediate (I):** Explores and evaluates prospective partnership opportunities, including impact upon ancillary functions, which may benefit the respective organizations. Participates in cross-functional activities to achieve organizational objectives. Interacts with clients in order to identify opportunities that meet organizational and technological needs. Identifies the client's operational requirements and relevant technological needs as they relate to its organizational strategy. Mines for operational and functional enhancements to projects and services. Assesses the potential capabilities of available, cost-effective technology. Develops tactical initiatives that proactively address client needs and provides recommendations that align short-term needs with strategic performance drivers. Anticipates unstated ways of better satisfying the client's needs. Develops networks and builds alliances. Supports staff in the development of partnerships with members in the professional community and other organizations.

## Competency and Proficiency Definitions — Building Partnerships (continued)

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**Advanced (A):** Partners with business leaders to identify cross-functional opportunities that integrate organizational and technological strategies, meet externally benchmarked criteria and integrate the client's specific operational requirements as they relate to the organizational strategy. Devises enhancements to plans and advises on emerging opportunities during large-scale implementations. Proactively identifies and creates options to meet the needs of multiple integrated client groups. Identifies potential initiatives through input from staff, vendors and clients. Meets with peers from client groups and proposes technological and deployment solutions and related changes in business processes. Shares and assesses potential solutions with appropriate experts. Recommends technological solutions that fit the clients' needs, capabilities and culture. Uses appropriate interpersonal skill and communication methods to build constructive relationships with customers, business units and organizations to meet mutual goals and objectives. Develops strategic relationships and overcomes difficult obstacles to develop relationships.

**Expert (E):** Participates in strategic planning sessions with leaders of client organizations as well as advisors to decide upon major capital investment and long-term budgetary expenditures. Gains strategic support. Balances response to ongoing operational needs consistent with strategic mission and vision. Makes strategic recommendations founded upon best practices in recognized leading industries. Initiates and organizes demonstrations which provide subject matter expertise and identify technological strategies that will support the achievement of business goals. Communicates and demonstrates the corporate values in client-related interactions. Allocates administrative, financial and technological resources for clients on major initiatives. Keeps support areas like budget and HR informed of program priorities, needs and issues, in pursuit of responsive service. Takes shared accountability for achieving the clients' objectives and enterprise goals. Develops new and unique partnerships, which will support the long-term goals of the organization; considers the long-term impact of the partnership beyond the immediate needs of either member.

## Competency and Proficiency Definitions — Change Advocate

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**Change Advocate:** Identifies and acts upon opportunities for continuous improvement. Encourages prudent risk-taking, exploration of alternative approaches and organizational learning. Demonstrates personal commitment to change through actions and words. Mobilizes others to support change through times of stress and uncertainty.

**Being Developed (BD):** Supports change initiatives by following new directions as directed and providing appropriate information. Asks for feedback and ideas on how to do a better job and tries new approaches.

**Basic (B):** Participates in change initiatives by implementing new directions and providing appropriate information and feedback. Offers ideas for improving work and team processes. Experiments with new approaches and improves productivity through trial and error.

**Intermediate (I):** Participates in change programs by planning implementation activities with other change champions. Interprets the meaning of new strategic directions for the work group and sets objectives and standards. Implements monitoring and feedback systems. Evaluates progress and finds ways of making continuous improvements. Solicits and offers ideas for improving primary business processes. Improves effectiveness and efficiency through the involvement of peers and business partners by initiating new approaches.

**Advanced (A):** Leads the planning and implementation of change programs that impact critical functions/processes. Partners with other resource managers/change agents to identify opportunities for significant process enhancements. Recommends changes that impact strategic business direction. Sets expectations for monitoring and feedback systems and reviews performance trends. Evaluates progress and involves peers and team members in analyzing strengths and weaknesses in performance. Improves efficiency by spearheading pilots and planned functional change initiatives.

**Expert (E):** Reviews, sponsors and approves recommendations for enterprise-wide change programs that impact cross functional key processes. Partners with other business leaders to identify opportunities for significant technology/process enhancements. Lobbies for changes that impact strategic business direction. Approves strategic monitoring criteria and reviews high-impact enterprise performance trends. Evaluates progress against key performance drivers and assesses organizational opportunities and risks. Solicits the support of business leaders in planning and spearheading enterprise change initiatives.

## Competency and Proficiency Definitions — Communications

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**Communication:** Clearly conveying and receiving information and ideas through a variety of media to individuals or groups in a manner that engages the audience, helps them understand and retain the message, and permits response and feedback from the audience. Expresses technical and business concepts, ideas, feelings, opinions and conclusions orally and in writing. Listens attentively and reinforces words through empathetic body language and tone.

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**Being Developed (BD):** Speaks and writes to peers in ways that support transactional activities. Shares information and asks questions prior to taking action.

**Basic (B):** Converses with and writes to peers in ways that support transactional and administrative activities. Seeks and shares information and opinions. Explains the immediate context of the situation, asks questions with follow-ups, and solicits advice prior to taking action.

**Intermediate (I):** Conducts discussions with and writes memoranda to all levels of colleagues and peer groups in ways that support troubleshooting and problem solving. Seeks and shares relevant information, opinions and judgments. Handles conflict empathetically. Explains the context of inter-related situations, asks probing questions, and solicits multiple sources of advice prior to taking action.

**Advanced (A):** Converses with, writes reports and creates/delivers presentations to all levels of colleagues and peer groups in ways that support problem solving and planning. Seeks a consensus with business partners. Debates opinions, tests understanding and clarifies judgments. Brings conflict into the open empathetically. Explains the context of multiple inter-related situations, asks searching, probing questions, and solicits expert advice prior to taking action and making recommendations.

**Expert (E):** Converses with, writes strategic documents and creates/delivers presentations to internal business leaders and as well as external groups. Leads discussions with senior leaders and external partners in ways that support strategic planning and decision-making. Seeks a consensus with business leaders. Debates opinions, tests understanding and clarifies judgments. Identifies underlying differences and resolves conflict openly and empathetically. Explains the context of multiple, complex inter-related situations. Asks searching, probing questions, plays devil's advocate, and solicits authoritative perspectives and advice prior to approving plans and recommendations.

## Competency and Proficiency Definitions — Consulting

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**Consulting:** Uses professional knowledge, experience and technical expertise to respond to questions, facilitate problem solving, and generally advises, influences and provides guidance to customers and business partners over whom there are no direct authority.

**Being Developed (BD):** Shares information in relation to procedures and routine activities. Provides guidance and advice. Suggests caution as appropriate. Asks questions that raise awareness and demonstrate insight.

**Basic (B):** Shares information and reports on the immediate situation. Provides feedback and advice as appropriate in relation to procedures and routine activities. Asks questions that raise awareness and demonstrate insight.

**Intermediate (I):** Conducts investigations and interprets issues within operational and professional contexts. Provides guidance and counsel. Suggests caution to impacted areas as appropriate in relation to matters of policy interpretation and implementation of operational improvement. Conducts discussions that share information and trigger solutions and improvements.

**Advanced (A):** Leads research and summarizes requirements for the engagement. Interprets issues within the framework of core business processes. Provides substantiated, risk-assessed options and counsel in relation to process enhancement and professional expertise. Facilitates dialogues that produce new perspectives and trigger recommendations for substantial innovative enhancements, and analysis of consequences.

**Expert (E):** Collaborates with clients to determine the scope of engagement. Advises senior leaders on environmental analysis, planning opportunities and implementation considerations for strategic interventions. Researches long-range world-class business and technology trends. Uses formal techniques of facilitation and analysis to assist leadership in criterion-based decision-making and strategic planning.

## Competency and Proficiency Definitions — Contributing to Team Success

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**Contributing to Team Success:** Actively participates as a member of a team to move the team toward the completion of goals. Collaborates with other members of formal and informal groups in the pursuit of common missions, vision, values and mutual goals. Places team needs and priorities above personal needs. Involves others in making decisions that affect them. Draws on the strengths of colleagues and gives credit to others' contributions and achievements.

**Being Developed (BD):** Participates willingly by supporting team decisions, assisting other team members, and doing his/her share of the work to meet goals and deadlines. Informs other team members about client-related decisions, group processes, individual actions, or influencing events. Shares all relevant and useful information.

**Basic (B):** Takes initiative to actively participate in team interactions. Without waiting to be asked, constructively expresses own point of view or concerns, even when it may be unpopular. Ensures that the limited time available for collaboration adds significant customer value and business results.

**Intermediate (I):** Actively solicits ideas and opinions from others to quickly accomplish specific objectives targeted at defined business outcomes. Openly encourages other team members to voice their ideas and concerns. Shows respect for differences and diversity, and disagrees without personalizing issues. Utilizes strengths of team members to achieve optimal performance.

**Advanced (A):** Consistently fosters collaboration and respect among team members by addressing elements of the group process that impedes, or could impede, the group from reaching its goal. Engages the “right people”, despite location or functional specialty, in the team by matching individual capabilities and skills to the team’s goals. Works with a wide range of teams and readily shares lessons learned.

**Expert (E):** Identifies and improves communication to bring conflict within the team into the open and facilitate resolution. Openly shares credit for team accomplishment. Monitors individual and team effectiveness and recommends improvement to facilitate collaboration. Considered a role model as a team player. Demonstrates high level of enthusiasm and commitment to team goals under difficult or adverse situations; encourages others to respond similarly. Strongly influences team strategy and processes.

## Competency and Proficiency Definitions — Customer-Focused

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**Customer Focused:** Makes customers and their needs a primary focus of one's actions; develops and sustains productive customer relationships. Identifies the ongoing needs of internal and/or external clients. Ensures these needs are met or exceeded.

**Being Developed (BD):** Asks questions in response to clients' requests for assistance on day-to-day needs. Responds promptly and courteously. Updates clients on progress. Solicits support and guidance as needed and refers client requests appropriately.

**Basic (B):** Asks questions and conducts investigations in response to clients' requests for assistance on day-to-day needs. Responds promptly and courteously. Updates clients on progress. Instructs clients on products and services and how to apply them to their business processes. Escalates to appropriate parties as needed. Makes customers and their needs a primary focus of one's actions.

**Intermediate (I):** Asks questions and conducts investigations in order to understand clients' specific needs and provides prompt, attentive service. Understands client's expectations and takes initiatives to meet and exceed them. Monitors progress and updates client and management as to status. Educates clients in ways of using products and services. Quickly and effectively solves customer problems. Develops trust and credibility with the customer.

**Advanced (A):** Researches the underlying needs of business partners and recommends options with cost benefits. Leads initiatives and programs to meet and exceed customer's expectations of deliverables. Monitors performance trends and updates business partners and senior management on progress. Educates clients in performance improvement opportunities offered by existing and new technologies. Responds to escalated service issues and involves other subject matter experts as needed. Develops and maintains strong relationships with customers. Ensures customer satisfaction.

**Expert (E):** Compares internal practices and performance trends with industry best practices. Assesses the long-term needs of the enterprise, Approves and seeks consensus for options with cost benefits. Lobbies for and sponsors enterprise programs to meet and exceed agreed standards. Reviews performance trends and provides feedback to business leaders on progress and corrective strategies. Educates business leaders in performance improvement opportunities offered by existing and new technologies and services. Reviews escalated service response capability and procure subject matter authorities as needed. Develops and sustains productive customer relationships.

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## Competency and Proficiency Definitions — Decision-Making

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**Decision Making:** Identifies and understands issues, problems and opportunities. Compares data from different sources to draw conclusions. Uses effective approaches for choosing a course of action or developing appropriate solutions. Takes action that is consistent with available facts, constraints and probable consequences. Assesses the scope and potential impact of an issue or opportunity.

**Being Developed (BD):** Applies values, policies and procedures to make timely, routine decisions of limited, clear choice. Seeks instructions or escalates matters that require judgment.

**Basic (B):** Applies values, policies, procedures and precedent to make timely, routine decisions of limited, clear choice. Seeks advice and guidance or escalates matters that require judgment.

**Intermediate (I):** Applies values, business strategy, policies, procedures and precedent to make timely decisions with limited consequences. Gathers data to support recommendations and seeks approval for taking action that will set precedent while minimizing potential risk.

**Advanced (A):** Applies values, business strategy, policies, precedent and experience to make complex decisions with uncertain consequences. Makes benchmarked, researched recommendations with contingency plans in place for potential adverse consequences. Lobbies business partners and subject matter experts for consensus in taking action that sets direction in at least one critical business function. Promotes a tolerance for risk within boundaries that equate with the benefits.

**Expert (E):** Applies values, business strategy and collective experience to make policy decisions with incomplete, conflicting information and uncertain long-term consequences. Sponsors and approves benchmarked, researched recommendations with contingency plans in place. Participates with senior business leaders and subject matter authorities in defining strategies and courses of action that will impact the enterprise. Makes timely decisions that set enterprise-wide direction. Promotes a tolerance for high long-term risk that equates with significant returns on the investment.

## Competency and Proficiency Definitions — Information-Seeking

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**Information Seeking:** Gathers and analyzes information or data on current and future trends of best practice. Seeks information on issues impacting the progress of organizational and process issues. Translates up to date information into continuous improvement activities that enhance performance.

**Being Developed (BD):** Asks questions and solicits procedural information that explains how day-to-day tasks are conducted. Collates facts and data. Checks and monitors progress of activities in area of responsibility. Seeks out the appropriate people for guidance when needed to get things done.

**Basic (B):** Seeks information on both formal and informal processes. Uses appropriate tools, techniques and sources to gather, update and monitor information. Checks for accuracy of interpretation. Seeks out the appropriate people for guidance when needed depending on the type of issue.

**Intermediate (I):** Utilizes a variety of information and data sources pertaining to organizational and professional trends. Checks the source for omission and accuracy. Identifies the sources that are appropriate for specific types of information. Checks for bias and omission. Seeks out the appropriate people to approach for guidance either formally or informally depending on the type of issue. Links information in a lateral as well as linear manner. Finds hidden data. Relates and manipulates data from various sources to create a fuller picture. Investigates and uncovers root causes of a problem or issue.

**Advanced (A):** Researches organizational and professional trends. Networks internally and externally on areas of interest and concern. Evaluates sources, and collates and compares findings for bias, omission and accuracy. Conducts objective analysis. Prioritizes information by source. Monitors systematically. Deploys resources (time, people, systems) to ensure timely management reporting. Reviews and determines need for corrective action and/or business opportunities.

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## Competency and Proficiency Definitions — Information-Seeking (continued)

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**Expert (E):** Studies environmental, business and technological trends and forecasts. Networks among thought leaders and strategic influencers. Differentiates data sources for validity, reliability and credibility. Tracks and synthesizes systemic benchmarking trends. Evaluates composite information in relation to its impact on decision-making and strategic implications. Sets expectations for and reviews management and key stakeholder reports. Assesses validity of business strategy recommendations against trend data. Steers senior leadership towards making informed, sound strategic decisions.

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## Competency and Proficiency Definitions — Initiating Action

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**Initiating Action:** Takes prompt action to accomplish objectives. Takes action to achieve goals beyond what is required and being proactive. Voluntarily takes the first steps to identify and address existing and potential obstacles, issues and opportunities.

**Being Developed (BD):** Volunteers to undertake activities within his or her capability. Asks questions and gathers information prior to taking on new tasks. Seeks help where challenged in trying something new.

**Basic (B):** Volunteers to undertake tasks that stretch his or her capability. Identifies who can provide support and procures their input. Identifies problems and acts to prevent and solve them.

**Intermediate (I):** Seeks out new challenges that require risk taking. Determines the resources, team support and technical needs necessary to enable success and procures them. Keeps responding to the challenge in spite of obstacles and setbacks.

**Advanced (A):** Describes future scenarios and related opportunities. Plans potential responses involving resource holders, peers, processes and technology. Leads a timely response, seeking internal/external advice and consultation and sustains progress through uncharted territories.

**Expert (E):** Integrates future and conflicting scenarios and opportunities. Directs planning for potentially significant outcomes and contingency plans. Identifies areas of high risk. Procures significant commitment of organizational resources, involving resource owners, organizational leaders, core business processes and technologies. Leads step-by-step long-term responses, seeking and evaluating input from authoritative sources. Sustains progress in unprecedented strategic directions while maintaining superior ongoing performance.

## Competency and Proficiency Definitions — Innovation

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**Innovation:** Generates innovative solutions in work situations. Tries different and novel ways to deal with work problems and opportunities. Improves organizational performance through the application of original thinking to existing and emerging methods, processes, products and services. Employs sound judgment in determining how innovations will be deployed to produce return on investment.

**Being Developed (BD):** Participates in problem-solving discussions and suggests ideas as opportunities arise. Accepts that new ways of doing things can improve individual and team results.

**Basic (B):** Reacts open-mindedly to new perspectives or ideas. Considers different or unusual solutions when appropriate. Identifies opportunities for innovation and offers new ideas. Takes the initiative to experiment.

**Intermediate (I):** Shares new ideas and consistently demonstrates openness to the opinions and views of others. Identifies new and different patterns, trends and opportunities. Generates solutions that build upon, adapt, and go beyond tradition and status quo. Targets important areas for innovation and develops solutions that address meaningful work issues. Seeks to involve other stakeholders in developing solutions to problems. Takes calculated risks.

**Advanced (A):** Challenges conventional thinking and traditional ways of operating and invites stakeholders to identify issues and opportunities. Helps others overcome resistance to change. Seeks out opportunities to improve, streamline, reinvent work processes. Explores numerous potential solutions and evaluates each before accepting any, as time permits. Maintains balance between innovation and pragmatism when determining the practical application of new ideas. Makes lots of proposals, builds on others' ideas. Sees opportunities, open-minded. Develops new products or services, methods or approaches. Develops better, faster, or less expensive ways to do things. Fosters a non-judgmental environment that stimulates creativity.

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## Competency and Proficiency Definitions — Innovation (continued)

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**Expert (E):** Thinks expansively by combining ideas in unique ways or making connections between disparate ideas. Devises unusual or radically different approaches to deliver value added solutions. Analyzes previously used concepts, processes or trends and devises new efficiencies not obvious by others. Directs creativity toward effective implementation of solutions. Creates a work environment that encourages creative thinking and innovation. Sponsors the development of new products, services, methods, or procedures. Exhibits creativity and innovation when contributing to organizational and individual objectives. Employs sound judgment when selecting among various creative ideas for implementation.

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## Competency and Proficiency Definitions — Planning and Organizing Work

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**Planning and Organizing Work:** Establishes courses of action for self and others to ensure that work is completed efficiently. Reduces uncertainty by monitoring and checking work or information and effectively managing time. Approaches work systematically, insisting on clarity of roles, functions, policies and practices.

**Being Developed (BD):** Strives to achieve clarity in roles, expectations and data. Understands the need for quality. Arranges files and information in a useful manner. Understands importance of effectively preparing for meetings. Can differentiate between tactical and strategic planning. Can describe the planning process in own area of responsibility.

**Basic (B):** Ensures quality of own work by double checking or proofing the accuracy and quality of the work. Ensures that own work is “done right the first time”. Defines agenda, key issues and key players for meetings and develops and distributes minutes for proper follow-up action. Monitors progress of work against project plan as required to meet objectives. Develops tactical plan for own direct responsibility.

**Intermediate (I):** Understands and seeks ways to improve the quality and results of one’s work. Ensures that team roles and responsibilities are defined and clearly communicated, and that the quality of the work efforts are meeting expectations. Procures resources (people, funding, material, support) to ensure that the unit’s work is produced in a prompt, quality manner. Provides input for strategic planning meetings so that they produce expected outcomes. Plans for allocation of resources in line with unit goals. Creates and implements a strategy for supporting current and future business needs.

**Advanced (A):** Instills in others the importance of planning and producing high-quality, timely work. Manages projects and presides over meetings so that they are producing expected outcomes. Plans for allocation of resources consistent with unit goals. Creates and implements a strategy for supporting current and future business needs.

**Expert (E):** Determines and communicates the business strategy for the unit/organization. Reviews and approves the final strategic plan in collaboration with the business units, and determines the resources needed for the organization. Directs the processes for developing, maintaining and communicating the improvements to the strategic plan.

## Competency and Proficiency Definitions — Quality Orientation

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**Quality Orientation:** Accomplishes tasks by considering all areas involved, no matter how small. Shows concern for all aspects of the job. Accurately checks processes and tasks, being watchful over a period of time. Demonstrates attention to detail and accuracy. Defines and organizes tasks, responsibilities and priorities. Takes responsibility for timely completion.

**Being Developed (BD):** Applies attention to detail to routine tasks defined in formal, written procedures and oral instructions. Seeks guidance on the quality and the degree of completion required for completing new tasks. Reprioritizes, as new deadlines are set. Responds constructively to customer feedback on task output.

**Basic (B):** Performs tasks according to quality and output standards. Takes initiative to ensure that outcomes meet internal and external customer requirements. Solicits feedback on performance in new tasks. Measures accuracy using performance metrics. Sets improvement standards to reduce errors, omissions and oversights.

**Intermediate (I):** Demonstrates operational agility. Uses organizational systems that result in multiple critical activities to be identified and completed on time. Renegotiates priorities as necessary. Puts systems in place and uses them to monitor and detect errors and problems. Tests and inspects outputs, and applies quality checks prior to work submission.

**Advanced (A):** Identifies potential areas of conflicting priorities and vulnerability in achieving standards. Reviews department's progress against established goals, objectives, service level targets and project milestones. Supports others in achieving deliverables by efficiently allocating resources and providing common organizing systems, techniques and disciplines. Maintains a proactive work review and approval process prior to assignment completion. Solicits internal and external customer evaluation of performance and devises measures for improvement.

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## Competency and Proficiency Definitions — Quality Orientation (continued)

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**Expert (E):** Sets the vision, defines the value and acts as role model for creating a culture that sets superior standards and delivers on time and on budget. Agrees upon service level and project expectations with senior leaders. Reviews enterprise's progress against established goals, objectives, service level targets and project milestones. Devises strategies for delivering large-scale projects on time. Proactively conducts business review meetings for reprioritization of resources and taking corrective action to respond to strategic initiatives. Holds self and leadership team members accountable for achievements, publicly recognizing successes. Identifies areas of potential vulnerability in achieving strategic business drivers. Supports the enterprise in achieving deliverables by investing in world-class organizational processes.

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## Competency and Proficiency Definitions — Strategic Planning

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**Strategic Planning:** Obtains information and identifies key issues and relationships relevant to achieving a long-range goal or vision. Commits to a course of action to accomplish a long-range goal or vision after developing alternatives based on logical assumptions, facts, available resources, constraints and organizational values.

**Being Developed: (BD)** Asks questions to solicit information about the department's strategic IT plan, and how it links to the business plan. Suggests improvements or enhancements to the status quo. Develops components for assigned area within a departmental strategic plan.

**Basic: (B)** Makes inquiries about the strategic IT plan and its alignment with the overall business plan. Makes actionable recommendations for continuous improvement. Provides input to strategic plan for areas of responsibility.

**Intermediate: (I)** Recommends departmental components of the strategic IT plan, its alignment with specific needs of business partners and assesses its impact on budgets and capital expenditure. Provides detailed analysis and summary of departmental issues for strategic planning. Develops strategies, alternatives and scenarios for reviewing project-specific initiatives. Tracks and reports progress against plan.

**Advanced: (A)** Develops business cases for strategic initiatives. Defines rationale, cost-benefits and planning assumptions for proposals. Analyzes operations, staffing requirements and capital improvements from a multi-year and multi-functional perspective. Develops analytical input for IT strategic plans. Presents recommendations to senior management team. Monitors functional plan.

**Expert: (E)** Reviews, approves and sponsors the cross-functional strategic technology plan. Integrates strategic business cases for composite enterprise and program-specific initiatives. Presents summary of enterprise issues and technology responses for strategic planning purposes. Presents detailed strategic plans and investment requirements to senior leadership and monitors progress against the plans, reallocating resources and changing priorities as needs dictate.

## Appendix B

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### Infrastructure and Operations Benchmark

# Table of Contents

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- **Benchmark Study Methodology:**

- Consensus Cost Model and Normalization
- Peer Group Selection.

- **Infrastructure Benchmark Results:**

- Summary of Spending and Staffing
- Enterprise Metrics.

- **Detail by Benchmark Functional Area:**

- IT Help Desk
- Client and Peripherals
- Telecommunications — Local, Wide Area and Metropolitan Area Networks, Internet Access, Voice Premise (Local) and Voice Network (Long Distance)
- Wintel, Unix, Mainframe, Storage.

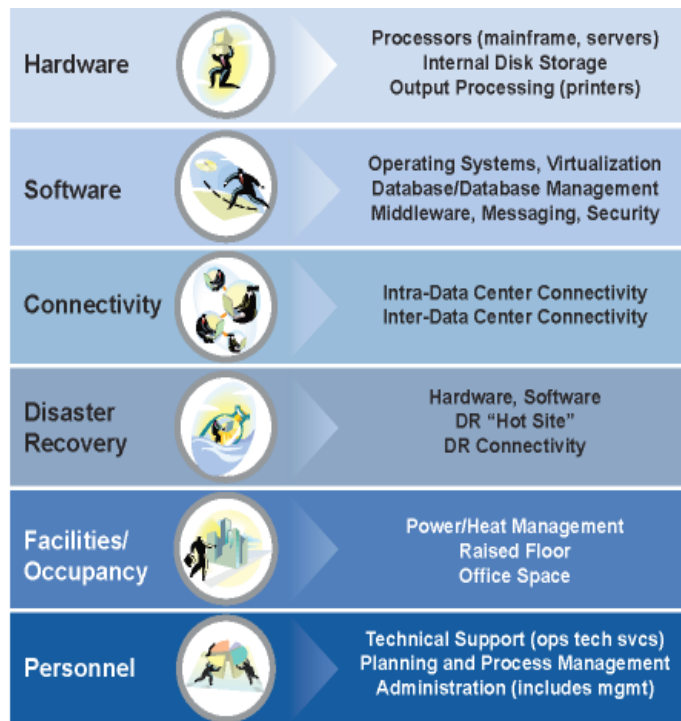
## Study Methodology

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# Benchmark Analysis Methodology

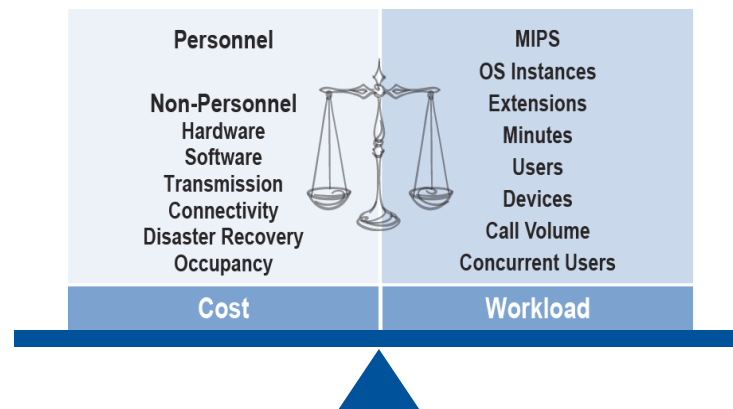
## Key Concepts

Adherence to “Consensus Models” ensures comparability



- Based on operational expense
- Labor is not depreciated

Workload represents a provided service and is balanced with cost



To compare with actual spending, an organization’s workload is multiplied by their peers’ average unit cost

$$\begin{array}{rcl} 5,000 & \leftarrow & \text{The organization's OS instance count} \\ \times \$1,200 & \leftarrow & \text{Peers' average cost per OS Instance} \\ \hline \$6,000,000 & \leftarrow & \text{Peers' cost for supporting the organization's instances} \end{array}$$

# Benchmark Analysis Methodology

## Key Concepts — Cost and Staffing

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### ■ Cost Concepts:

- Included are retained in-house costs and costs paid externally for staff augmentation and outsourcing services.
- Asset costs for items such as hardware and software include annual depreciation, lease and expenses. Maintenance charges are also included.
- Personnel costs reflect a fully-burdened salary to include benefits, travel and training.
  - Staffing Occupancy for Agency Services will use 250 sq. ft. @ \$17.90 = \$4,475 (Annual Charges)
  - Some costs are excluded, such as personnel-related costs associated with reductions in workforce, redundancy, relocations or retirement.

### ■ Staffing Concepts:

- Gartner uses the full-time equivalent (FTE) concept in defining staff resources. The State did not count the physical staff, but counted the logical staff by looking at the functions performed by the physical staff and for which they are responsible.
- FTEs were measured in calendar time, that is, if an individual works full time on an assignment for a full year that is one FTE. The State did not subtract vacation time, sick days, administration time and so forth. If the labor-tracking system shows, for example, 220 days actually worked, that represents one FTE in the enterprise.
- It was possible for the State to count less than one logical person for a physical person when not all of that individual's time falls within the scope of this analysis.
- All staffing levels within the organization from managers and project leaders to daily operations personnel were submitted by the State. The State reported summarized data for all categories to show the average staff level, adjusting for timing.

# Benchmark Analysis Methodology

## Peer Group Comparison

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### ■ Peer Group Comparison

- Peers are datasets collected by Gartner during assessment studies for Gartner clients. Peers are current to within 18 months.
- A unique peer group is selected for each IT function.
- Peer groups are used for cost efficiency comparisons.

### ■ How do we ensure comparability?

- All Gartner client data is collected using a standard chart of accounts, the consensus cost model. Attributes that define the client and peer organizations are consistently captured.
- An established methodology is used to identify the best peer matches based on the applicable attributes.

### ■ Peer Comparisons

- Michigan's results are displayed in comparison with two peer group reference points, the peer average and the peer 25th percentile (top quartile).
- The peer 25th percentile represents the lowest quartile in terms of efficiency for the peer group.
- Differences in spending and other metrics derived from this analysis provide insight into opportunities for increased cost efficiency and reduced risk.

# Benchmark Analysis Methodology

## Peer Group Selection

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### ■ Enterprise-Level Metrics

- Investment model
  - Cash out or cash flow analysis
  - Excludes depreciation
- Peers
  - Public Sector State and Local only
  - Peers are based on operating expense
- Database
  - Draws from 22 industries
  - IT organizations benchmarked by Gartner within the past 18 months

### ■ Cost Benchmark Metrics

- Investment model
  - IT operational expense, plus maintenance and depreciation
- Peers
  - Peers are based on workload supported by IT Domain (data center, desktop, help desk, etc.)
  - Selected on basis of workload and complexity which includes factors such as dispersion of sites supported, regulation
- Database
  - All industries are represented
  - IT organizations benchmarked by Gartner within the past 18 months

## Infrastructure Benchmark Results

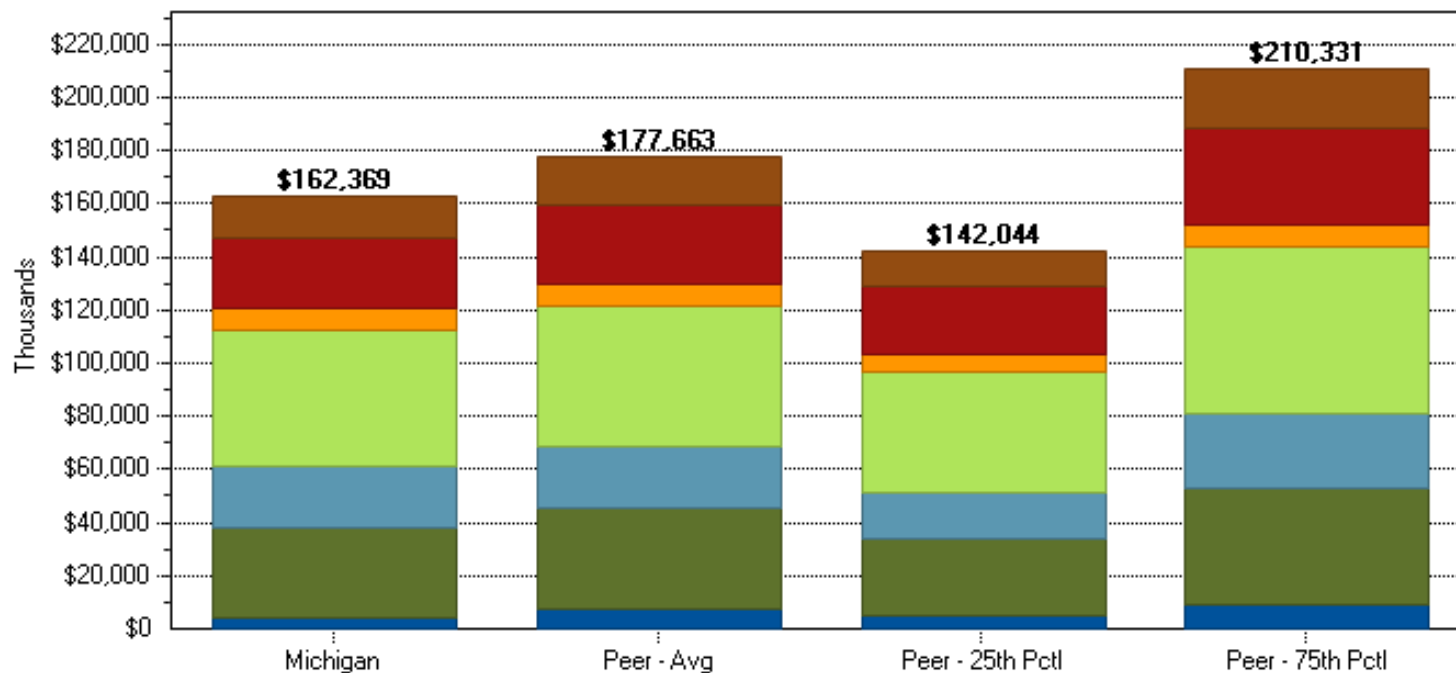
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## Summary of Findings

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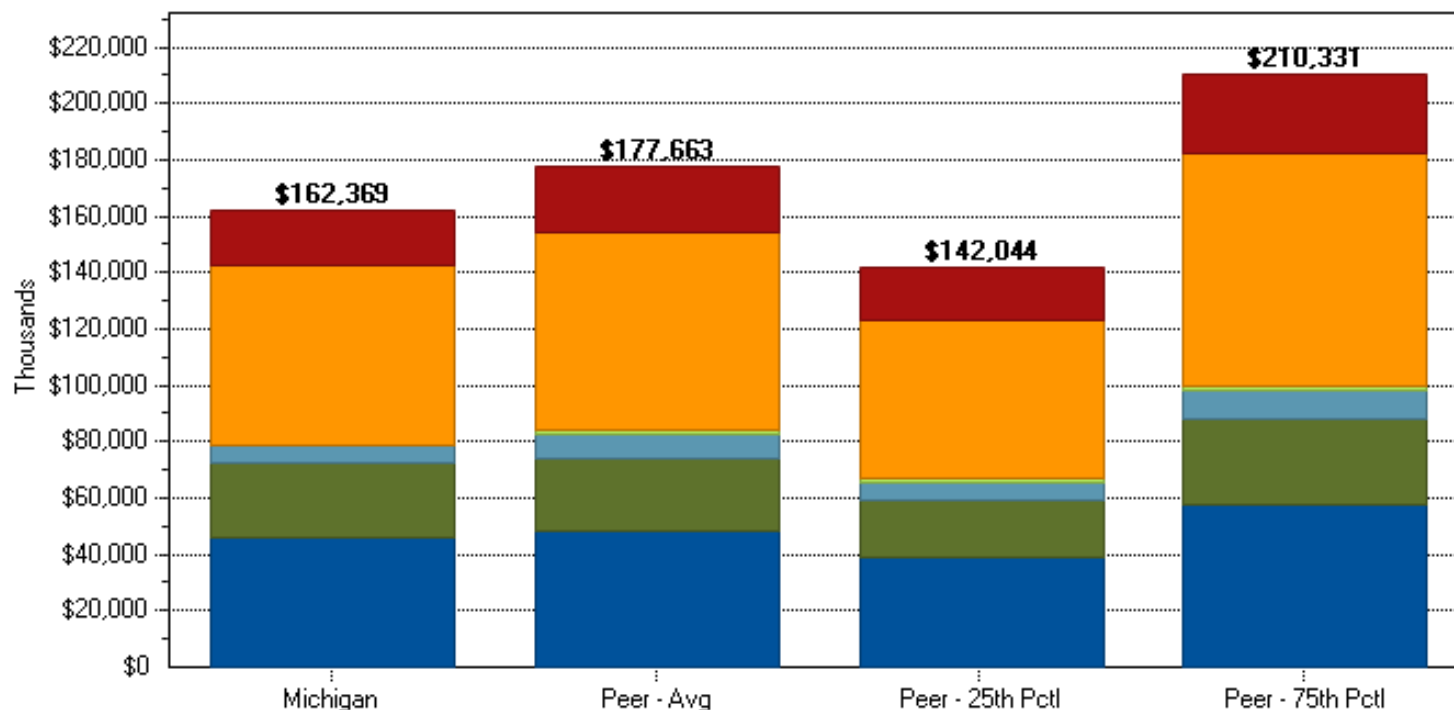
- The State of Michigan spends \$15M less than the peer group. Spending is lower than the peer group in all functional areas. Drivers of the variance include:
  - Lower spending in hardware, personnel, transmission and occupancy.
- Michigan spends more than the peer group in the software category.
  - Areas of higher spending include Help Desk, Unix, Internet, Storage. Wintel server software is lower than the peer group.
- Total staffing is lower than the peer group with Michigan at 616 and the peer group at 626.
  - Michigan utilizes fewer FTEs in some areas, for example Client and Peripheral, Unix and Data Networking, but more FTEs than the peer group in Wintel and Voice.
  - The cost per FTE is lower at Michigan compared to the peer group.
  - Michigan and the peer group utilize a similar number of external staff resources. Michigan utilizes more contractors than the peer group, at 40 vs. 26.4, but the peer group uses more outsourcing, with 28 FTEs.
  - Per capita spending on contractors is generally higher at Michigan with the exception of the Help Desk and Storage.

## Total Spending by Functional Area



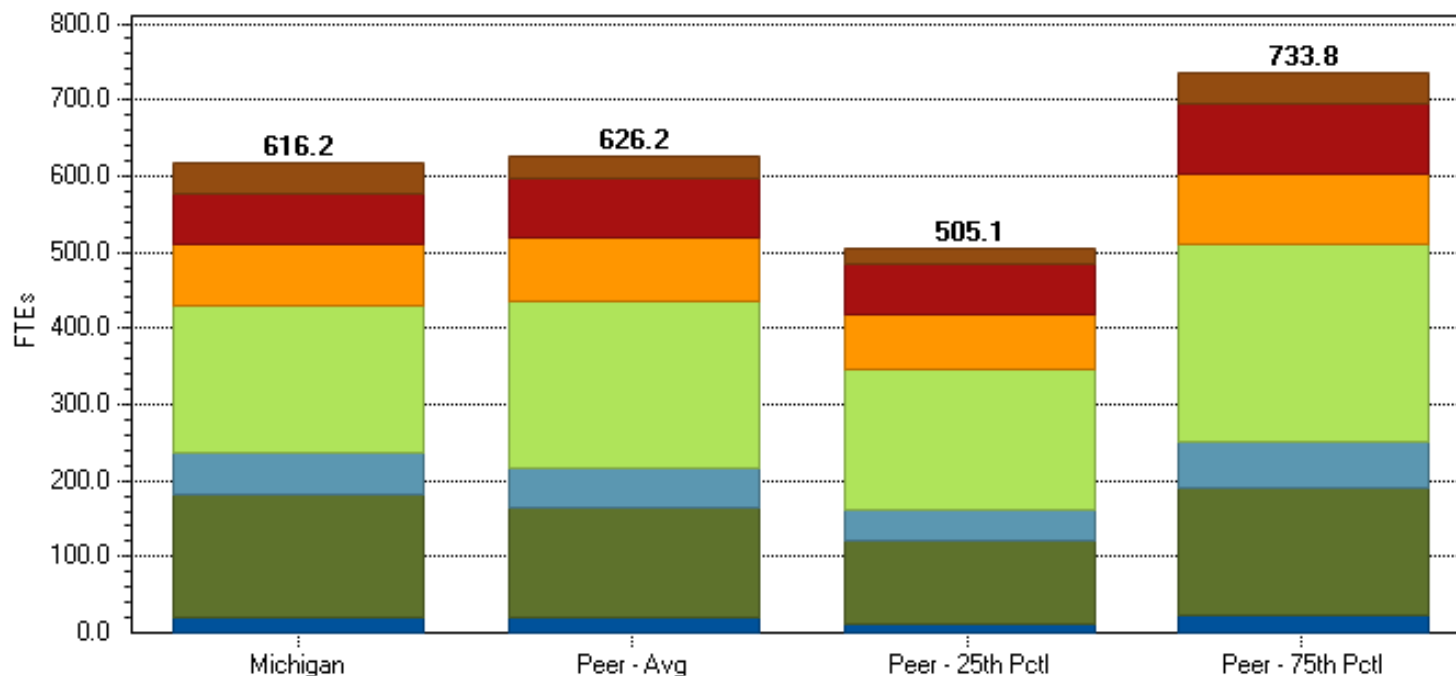
	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Mainframe	\$4,487	\$7,084	\$4,580	\$8,850
Servers - Unix and Wintel	\$33,740	\$38,169	\$28,931	\$43,814
Storage	\$22,657	\$23,507	\$18,078	\$28,242
Client & Peripherals	\$51,384	\$52,838	\$44,910	\$62,593
IT Help Desk	\$8,196	\$8,244	\$7,052	\$8,888
Data Networking	\$26,300	\$29,255	\$25,210	\$35,645
Voice Telecom	\$15,604	\$18,566	\$13,283	\$22,300

## Total Spending by Cost Category



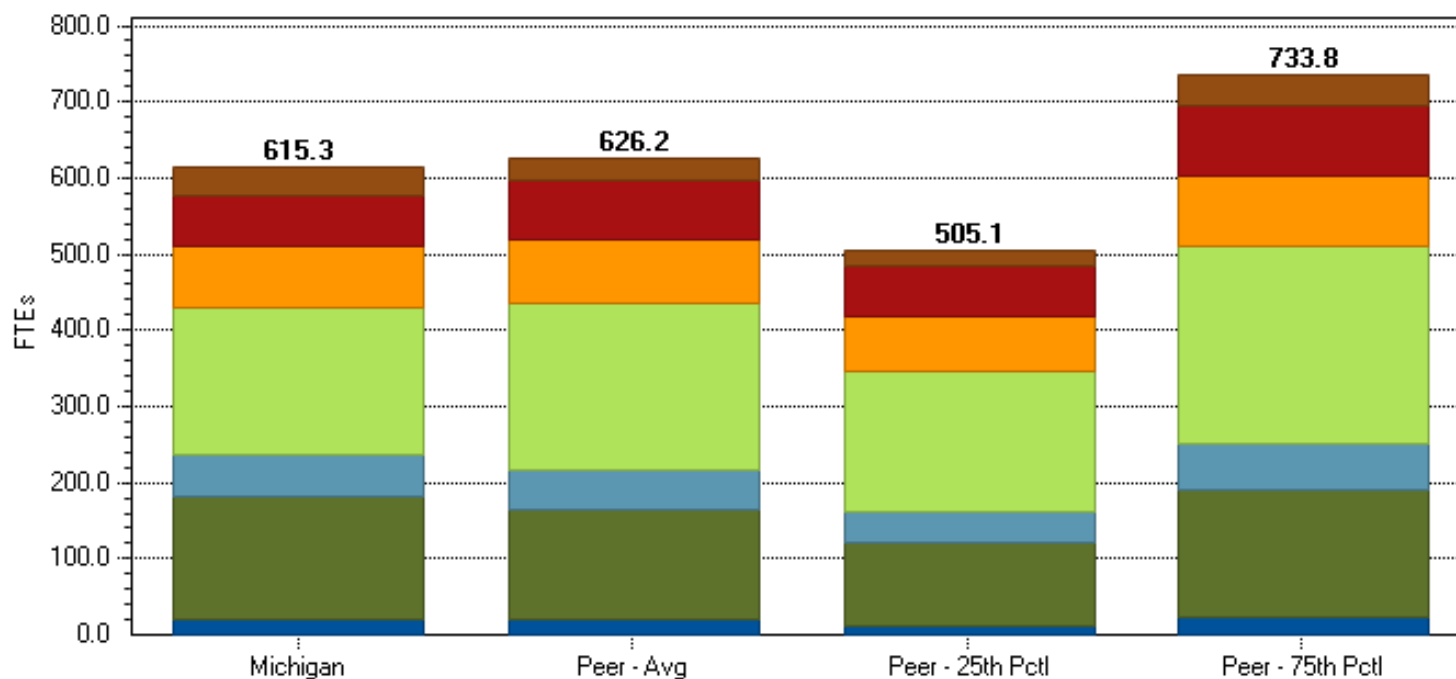
	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$45,733	\$48,594	\$39,258	\$57,838
Software	\$26,413	\$25,400	\$19,859	\$30,224
Occupancy	\$6,397	\$8,430	\$6,517	\$9,921
Disaster Recovery	\$0	\$1,548	\$1,180	\$1,847
Personnel	\$64,159	\$70,190	\$56,418	\$82,512
Transmission	\$19,667	\$23,500	\$18,812	\$27,989

## Total Adjusted FTEs by Functional Area



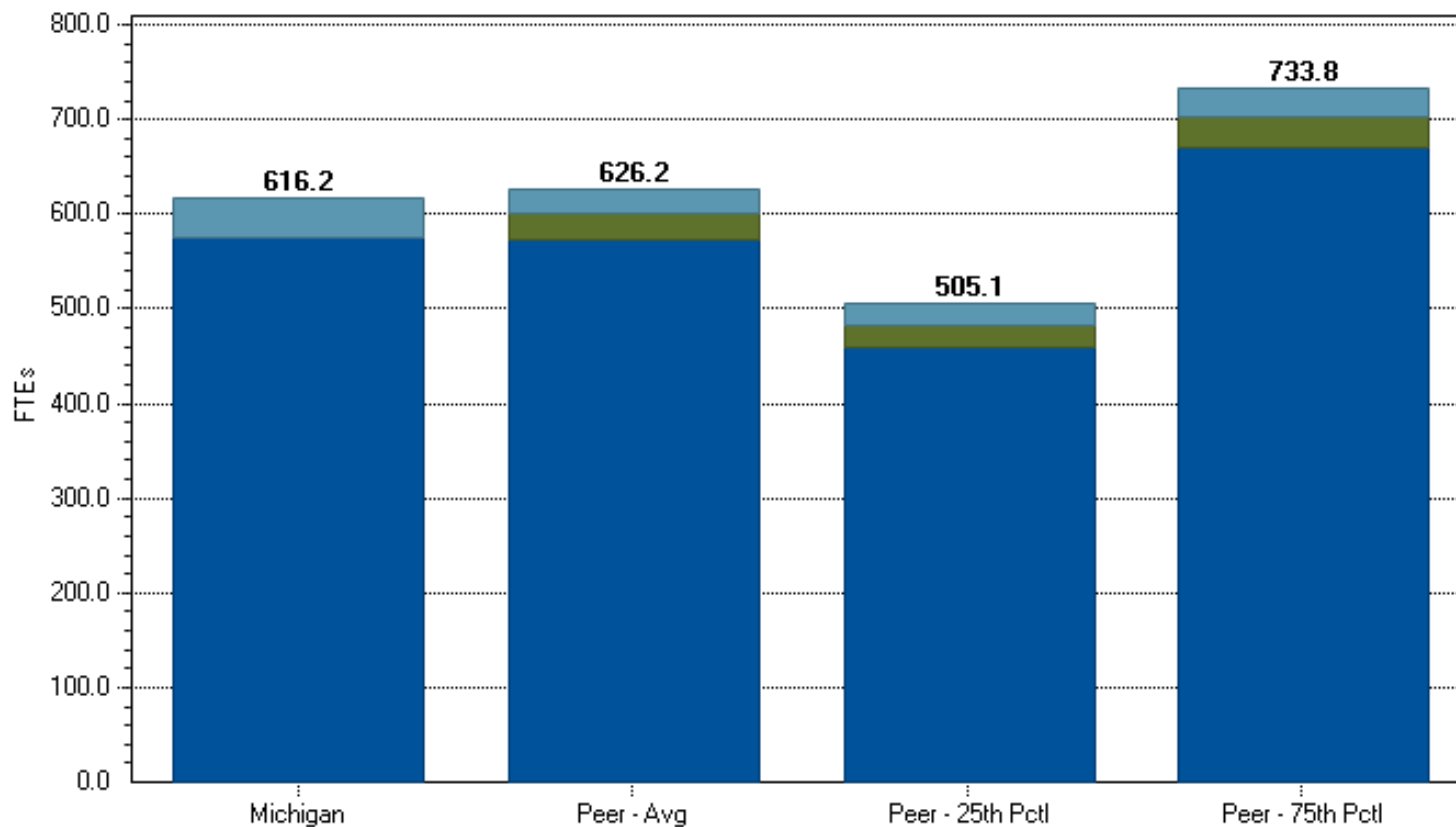
	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Mainframe	20.2	19.2	12.4	24.0
Servers - Unix and Wintel	160.8	144.8	108.3	165.8
Storage	56.2	51.3	39.4	61.6
Client & Peripheral	191.8	219.5	186.6	260.0
IT Help Desk	81.5	84.6	72.4	91.2
Data Networking	65.6	76.5	65.7	93.2
Voice Telecom	40.2	30.3	20.3	38.0

## Total FTEs by Functional Area



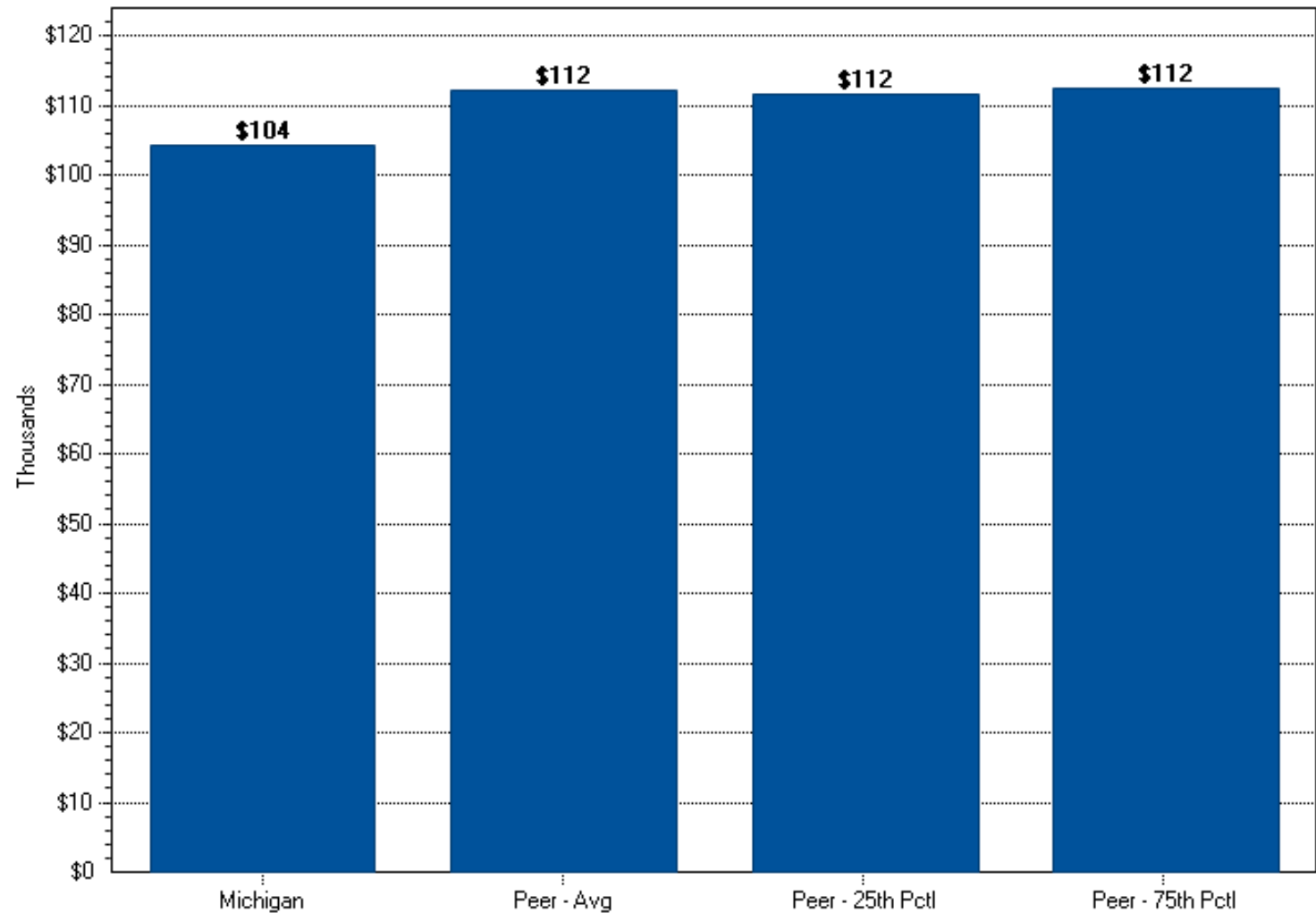
	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Compute - Mainframe	20.2	19.2	12.4	24.0
Compute - Servers	160.8	144.8	108.3	165.8
Storage	56.2	51.3	39.4	61.6
Client/Peripherals	191.8	219.5	186.6	260.0
IT Help Desk	80.6	84.6	72.4	91.2
Data Networking	65.6	76.5	65.7	93.2
Enterprise Telecom	40.2	30.3	20.3	38.0

## IT Head Count (FTEs) by Source



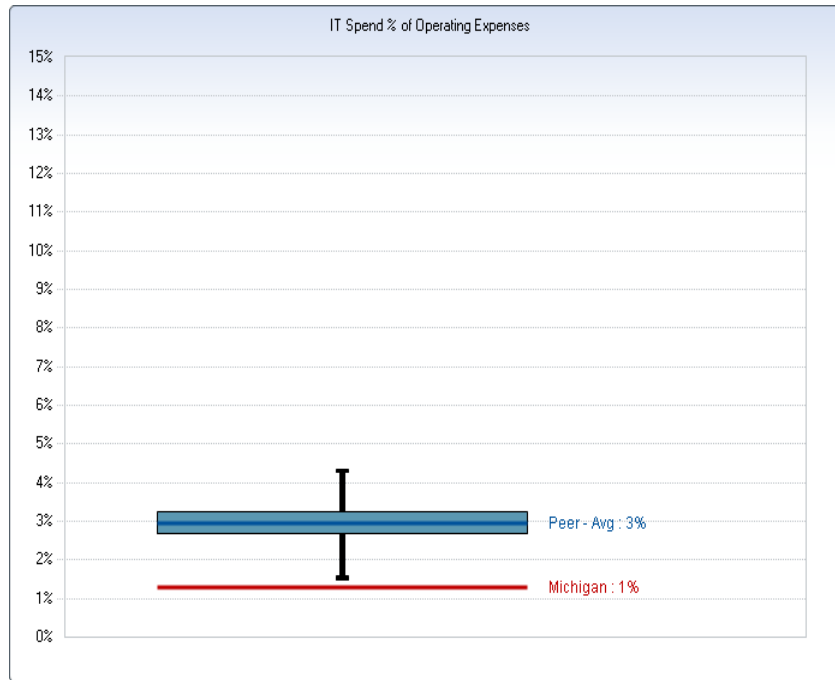
	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	575.3	571.8	459.4	670.5
Outsource Equivalent	0.9	28.0	23.7	32.7
Contractor	40.0	26.4	22.0	30.6

# Total Cost per FTE



# Enterprise Metrics

## IT Spending as a Percentage of OPEX



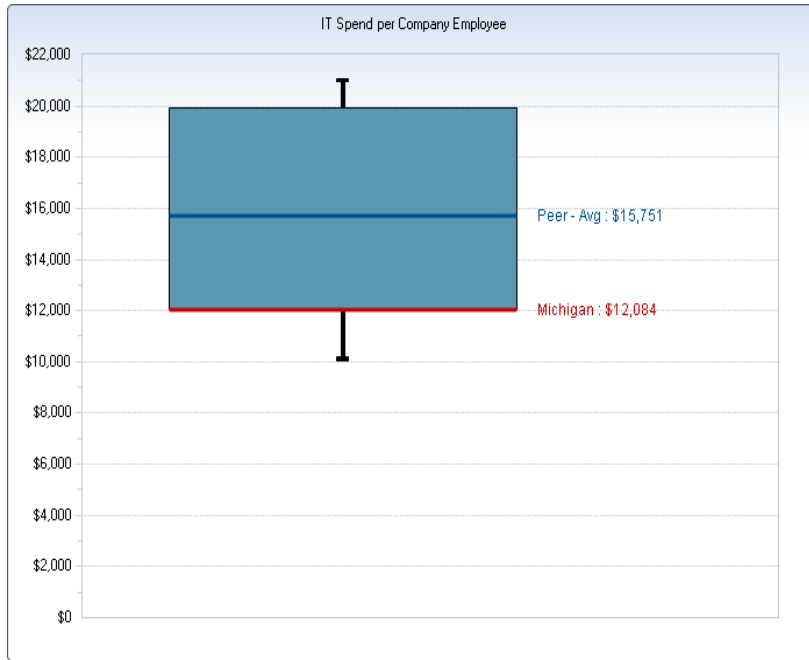
Cylinder denotes the median 50% of responses



- IT spending as a percentage of operational expenses provides a view of the role IT plays in the spending patterns of the business. The greater the amount of the operating expenses that is dedicated to IT, typically the greater need for visibility into the IT investments the business will require.
- Organizations with a near-average total IT spend percentage, but with higher than average infrastructure spend should assess the nature of their IT environment. Infrastructure investments may be used strategically, or might simply reflect high maintenance costs of legacy systems.

# Enterprise Metrics

## IT Spending per Company Employee



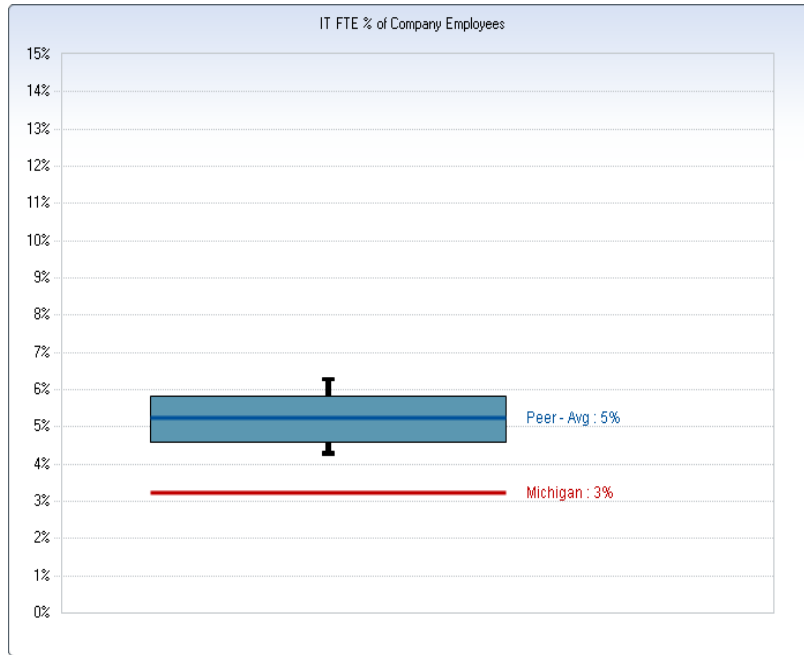
- IT spending per employee provides insight into the amount of technology support an organization's workforce receives.
- High spending can imply higher levels of automation and or higher investment in IT in general. Low spending levels can be related to higher overall staffing levels and or lower IT investment than peers.
- Large variations within industry groups can represent different business models for service or product delivery.

Cylinder denotes the median 50% of responses



# Enterprise Metrics

## IT Employee Distribution



Cylinder denotes the median 50% of responses

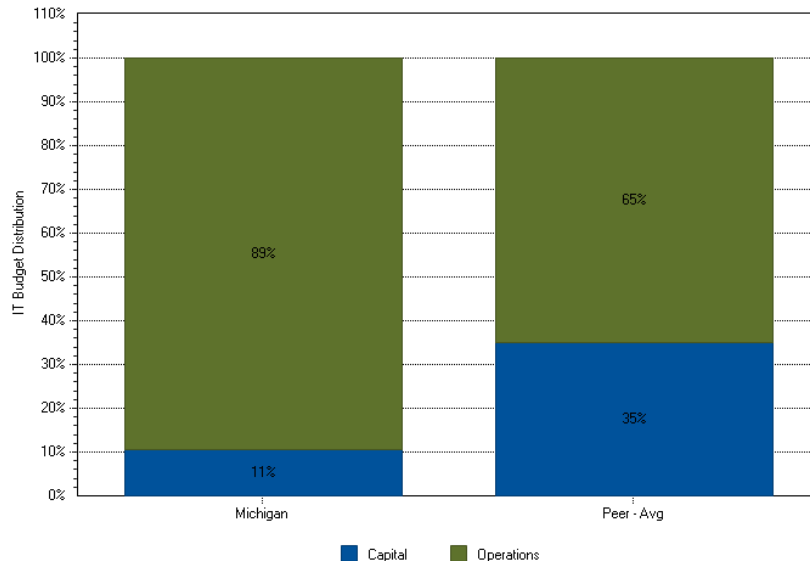


- The percentage of IT employees in the company compared to the total number of employees is a key measure of how critical IT support is to the business. This measure can be heavily influenced, however, by the level of outsourcing an organization may have.
- The percentage of infrastructure employees of total IT employees indicates the how labor-intensive support for the IT infrastructure is.
- Organizations with high levels of manageability and automation should require fewer operations staff. Manual processes and lack of standards will increase the number of IT FTEs needed.

# Enterprise Metrics

## IT Budget Distribution — Capital vs. Operations

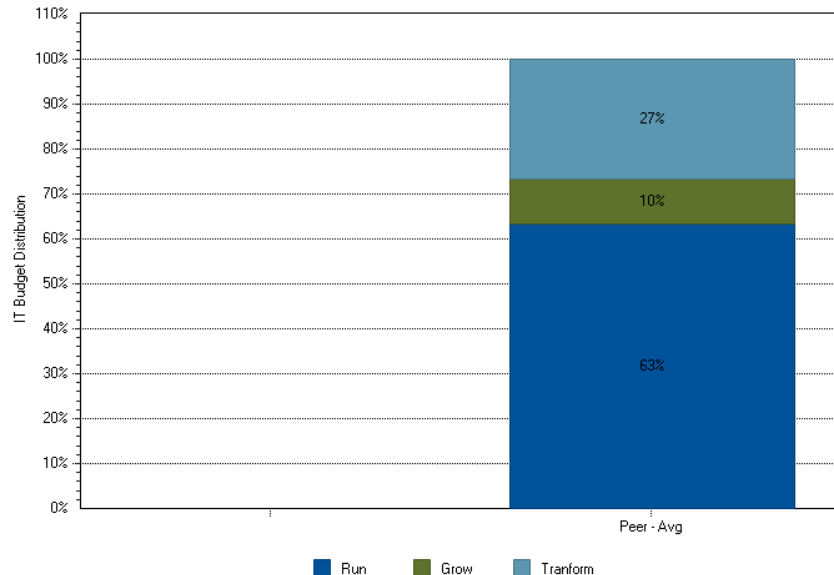
- IT capital expenses vs. operational expenses helps to portray the investment profile for an organization in a given year.



- Organizations with a higher capital spending may...
  - Be investing heavily in strategic IT infrastructure
  - Have reached a planned point of investment in their infrastructure life cycle
  - Not have been managing asset investments well (i.e., “catching up”)
  - Simply have a more aggressive capitalization policy.
- The breakout of Run, Grow, Transform spending that follows may provide more insight.

# Enterprise Metrics

## IT Budget Distribution — Run, Grow and Transform



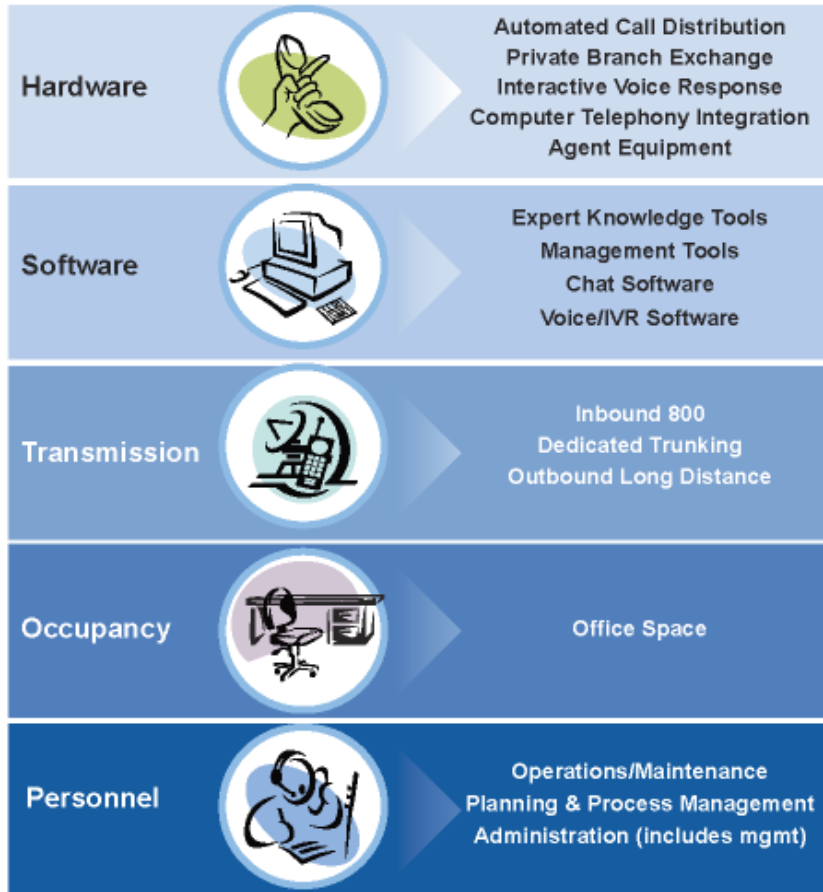
- “Run the business” investment ties to activities that support core business operations — efficiency and performance optimization should be key themes.
- “Grow” activities tie to organic growth and increased customer demand.
- “Transformation” is linked to changes to the business model, and introduction of new products and services.
- Generally speaking, high-“run” spending may indicate a limited strategic role for IT, while high-“grow” and “transform” spending might indicate IT has a stronger strategic role where the focus should be on ROI.

# Details by Benchmark Area

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# IT Help Desk

## Scope



### ■ Scope

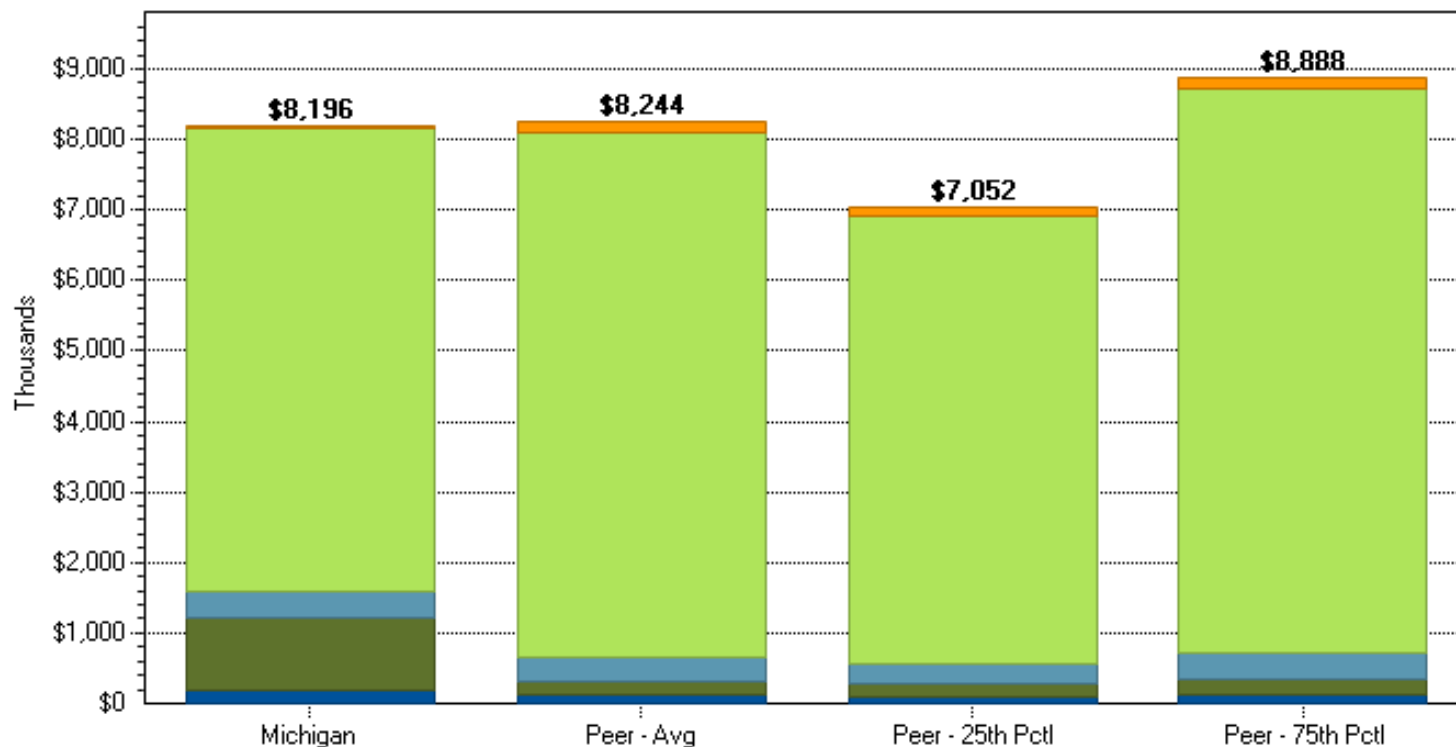
- Contacts handled — 525,241
- FTEs before allocations — 79.6
- FTEs after allocations — 80.6
- Spending level — \$8.2M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of contacts handled
- 3 Utilities, 2 Insurance, 2 Healthcare, 2 Financial Services, 1 Consumer Goods

# IT Help Desk

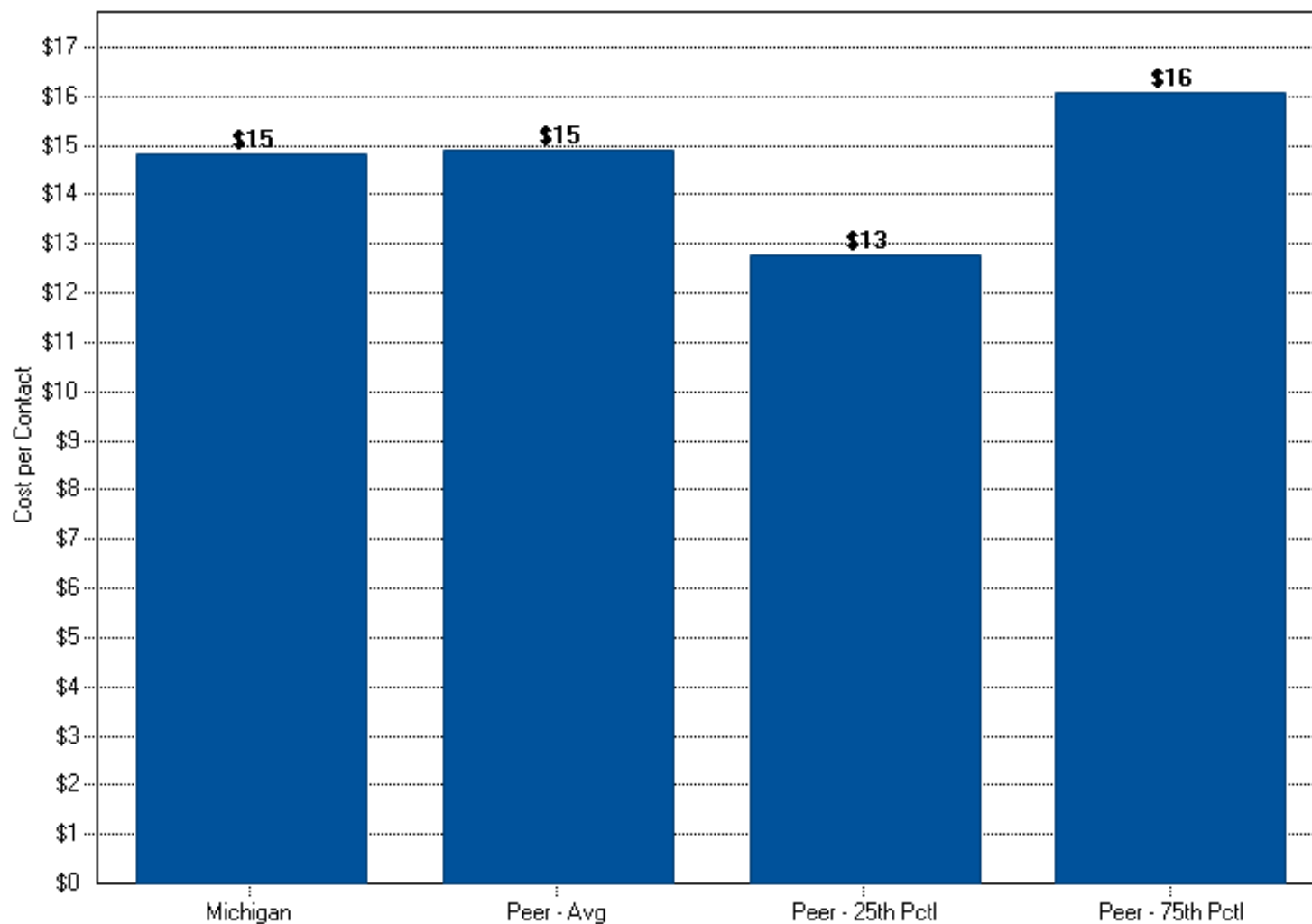
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$190	\$114	\$97	\$123
Software	\$1,039	\$204	\$175	\$220
Occupancy	\$364	\$333	\$285	\$359
Personnel	\$6,569	\$7,440	\$6,364	\$8,022
Transmission	\$35	\$152	\$130	\$164

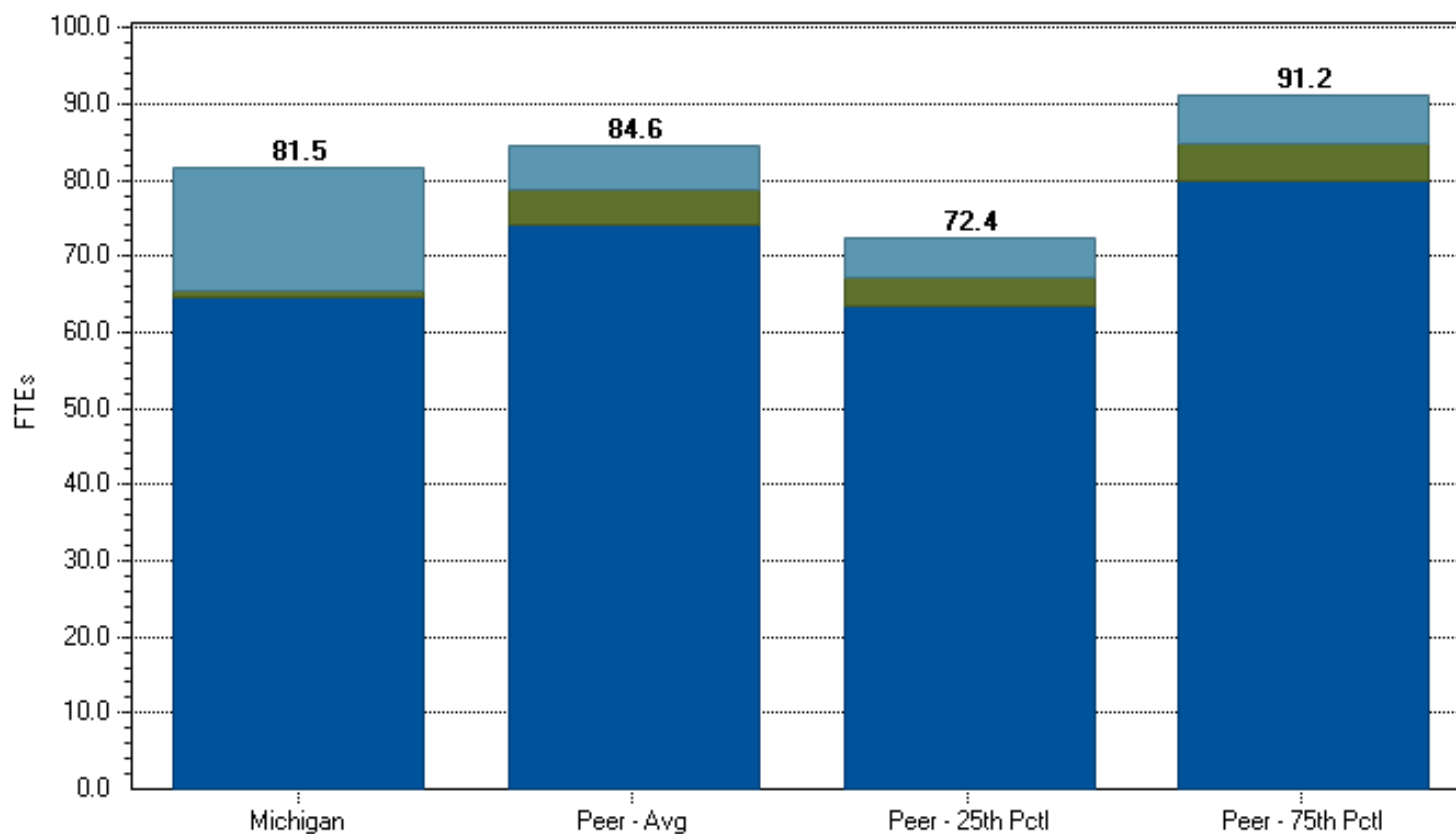
# IT Help Desk

## Efficiency — Total Cost per Contact



# IT Help Desk

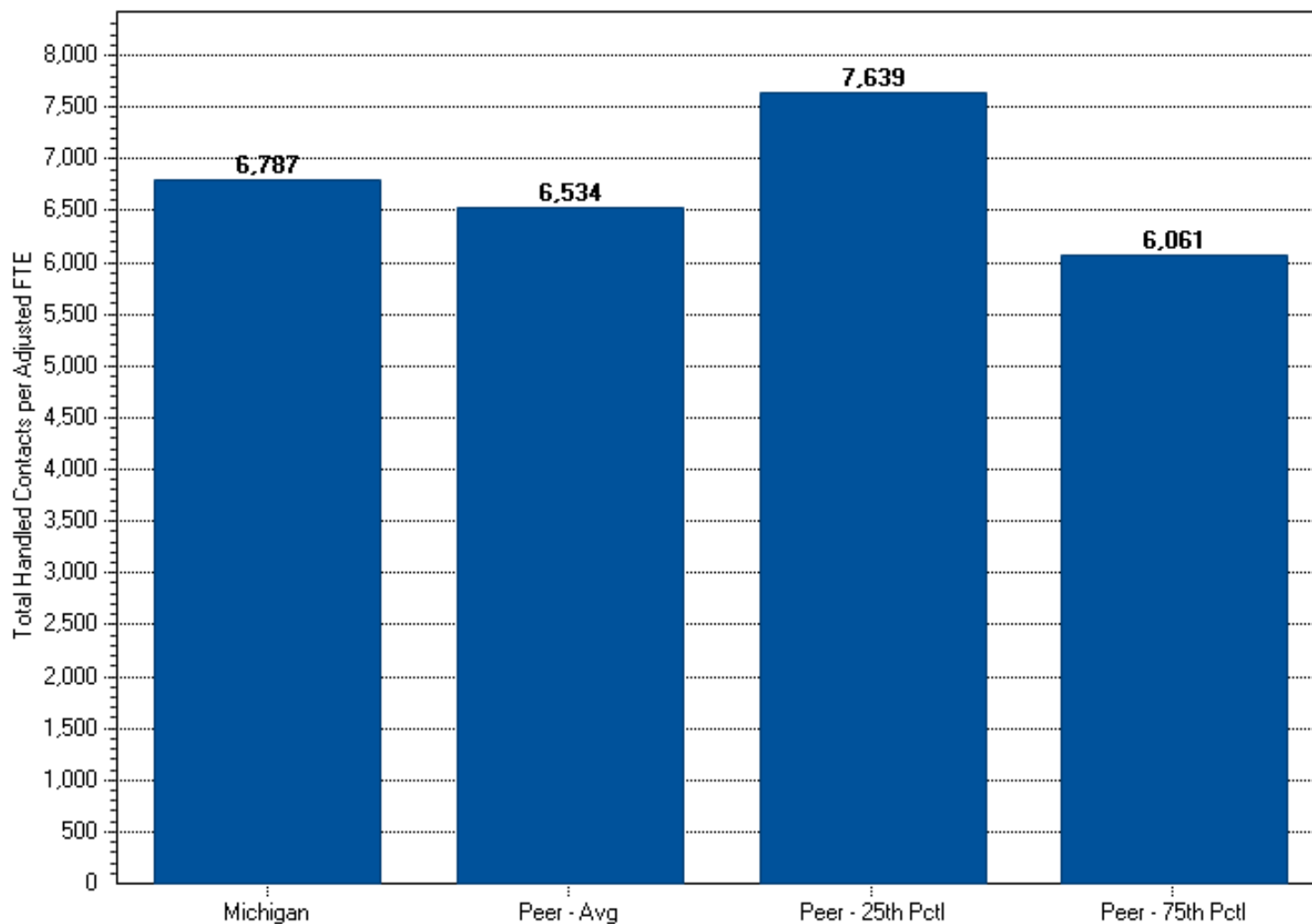
## IT Head Count (FTEs) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	64.7	74.2	63.5	80.0
Outsource Equivalent	0.9	4.5	3.9	4.9
Contractor	15.9	5.9	5.1	6.4

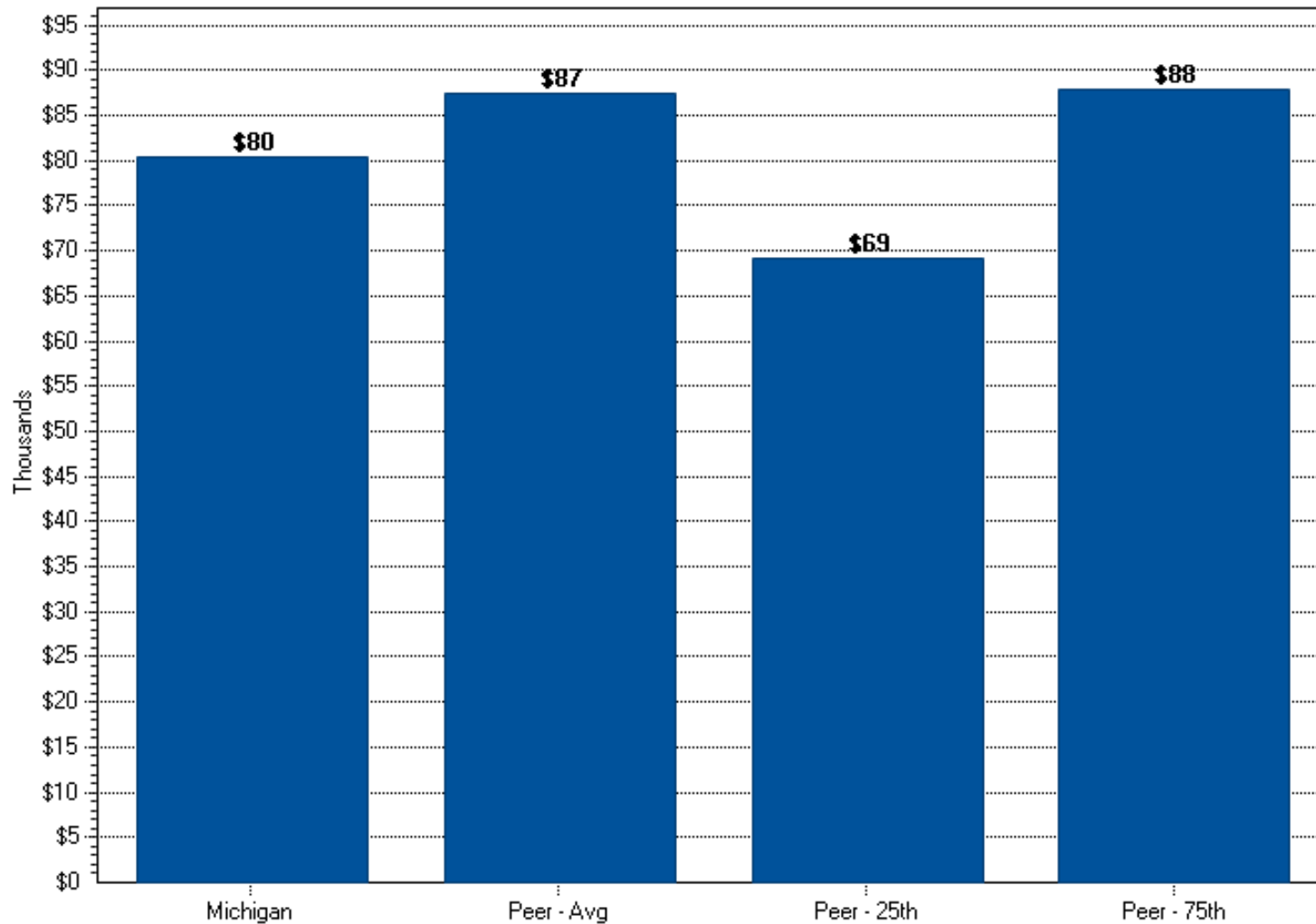
# IT Help Desk

## Productivity — Handled Contacts per Adjusted FTE



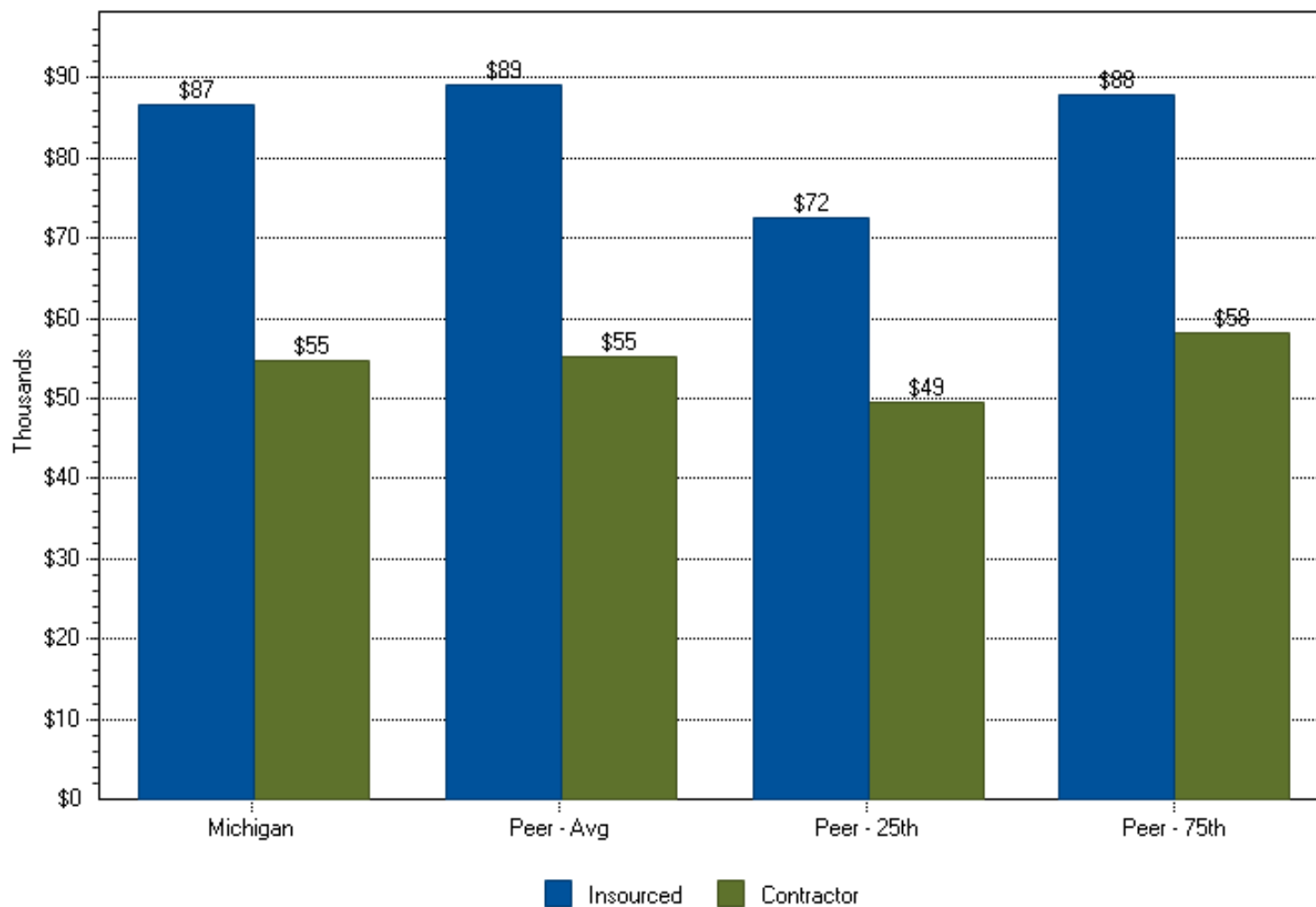
# IT Help Desk

Cost per FTE — Insourced and Contractor Blended Total



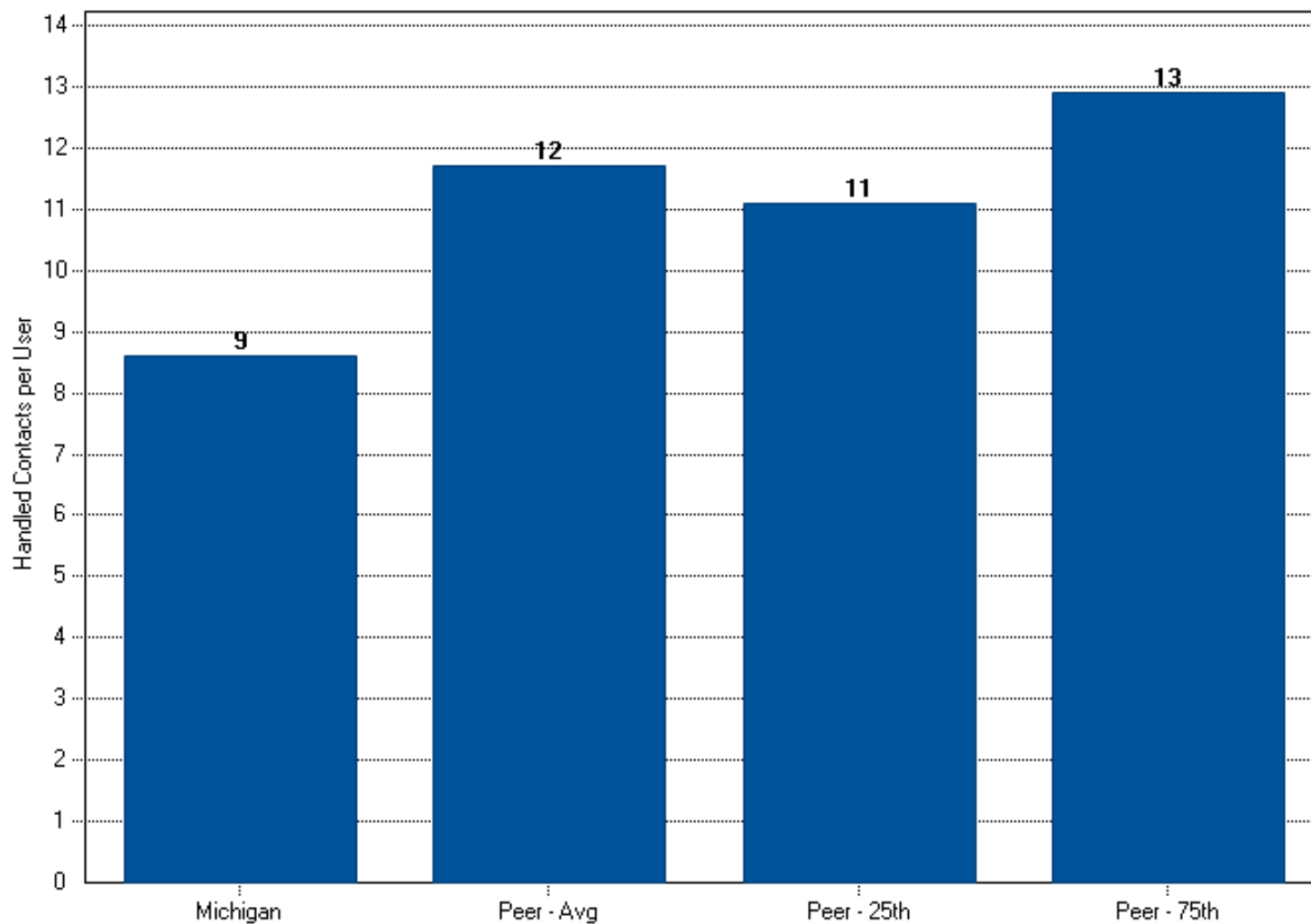
## IT Help Desk

Cost per FTE — Contractor and Insourced



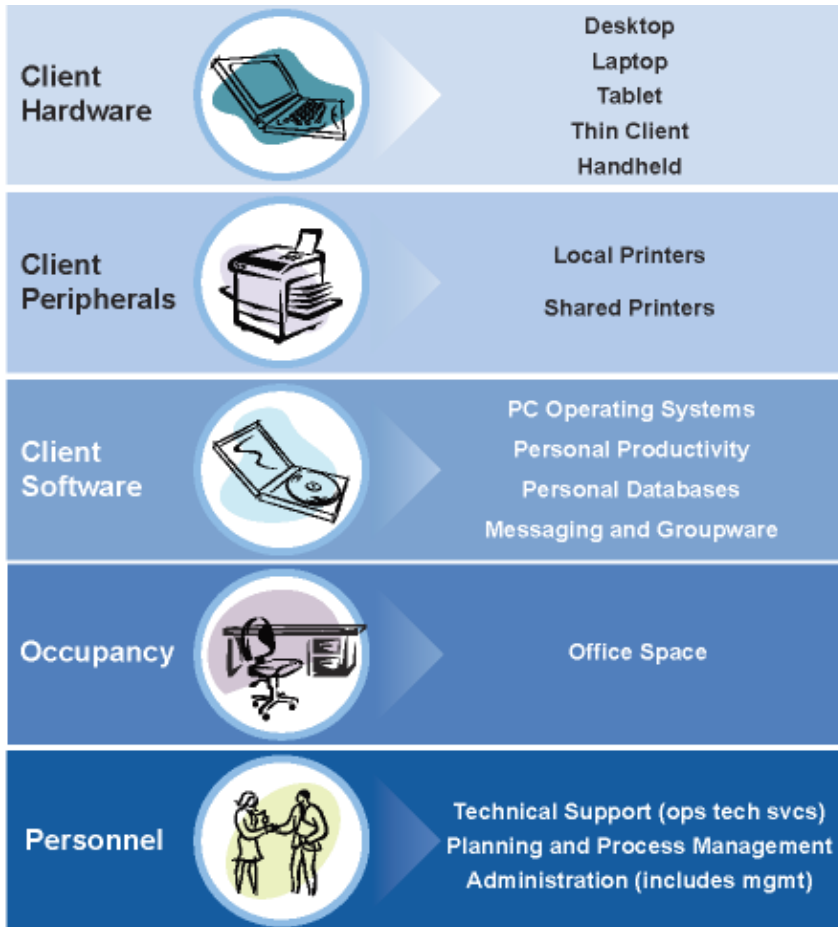
## IT Help Desk

### Annual Handled Contacts per End User



# Client and Peripheral Support

## Scope



### ■ Scope

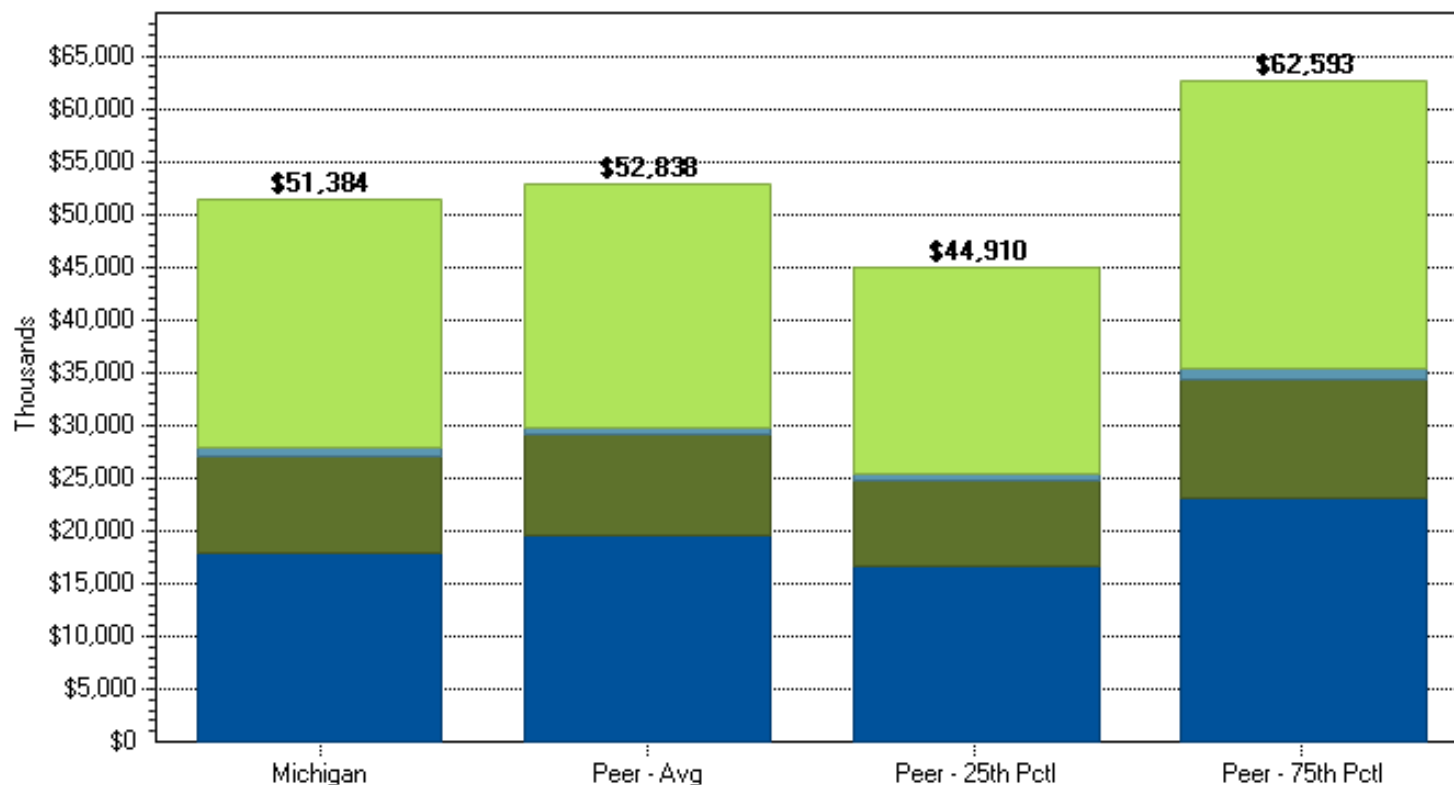
- Total Personal Computing Devices — 61,030
- Total Users — 68,675
- Total Sites — 949
- FTEs before allocations — 168
- FTEs after allocations — 191.8
- Spending level — \$51.4M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of devices, sites and users
- 3 Utilities, 2 Insurance, 2 Telecommunications, 2 Financial Services, 2 Consumer Goods

# Client and Peripheral Support

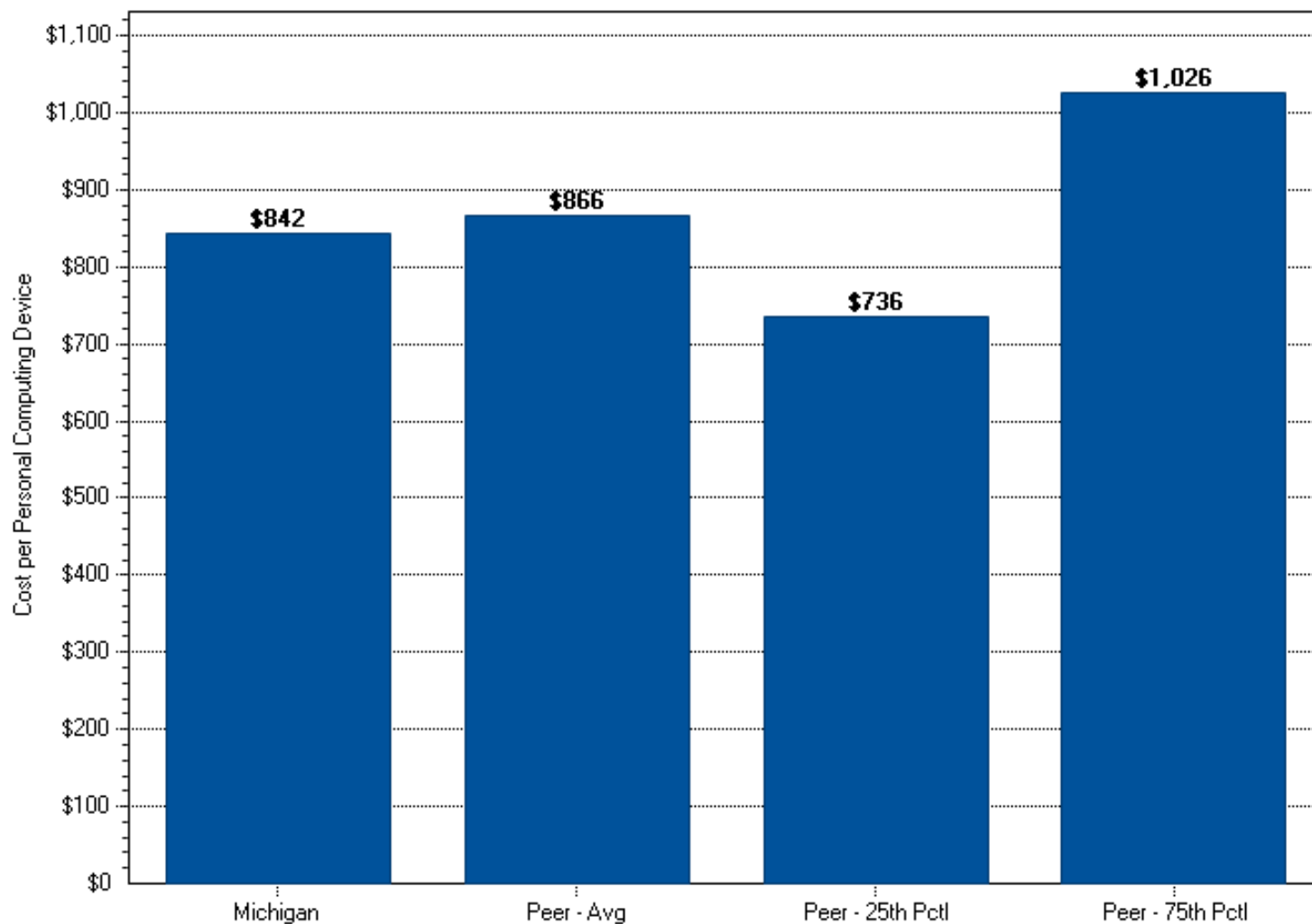
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$17,849	\$19,457	\$16,538	\$23,050
Software	\$9,180	\$9,582	\$8,145	\$11,351
Occupancy	\$811	\$804	\$683	\$952
Personnel	\$23,543	\$22,994	\$19,544	\$27,240

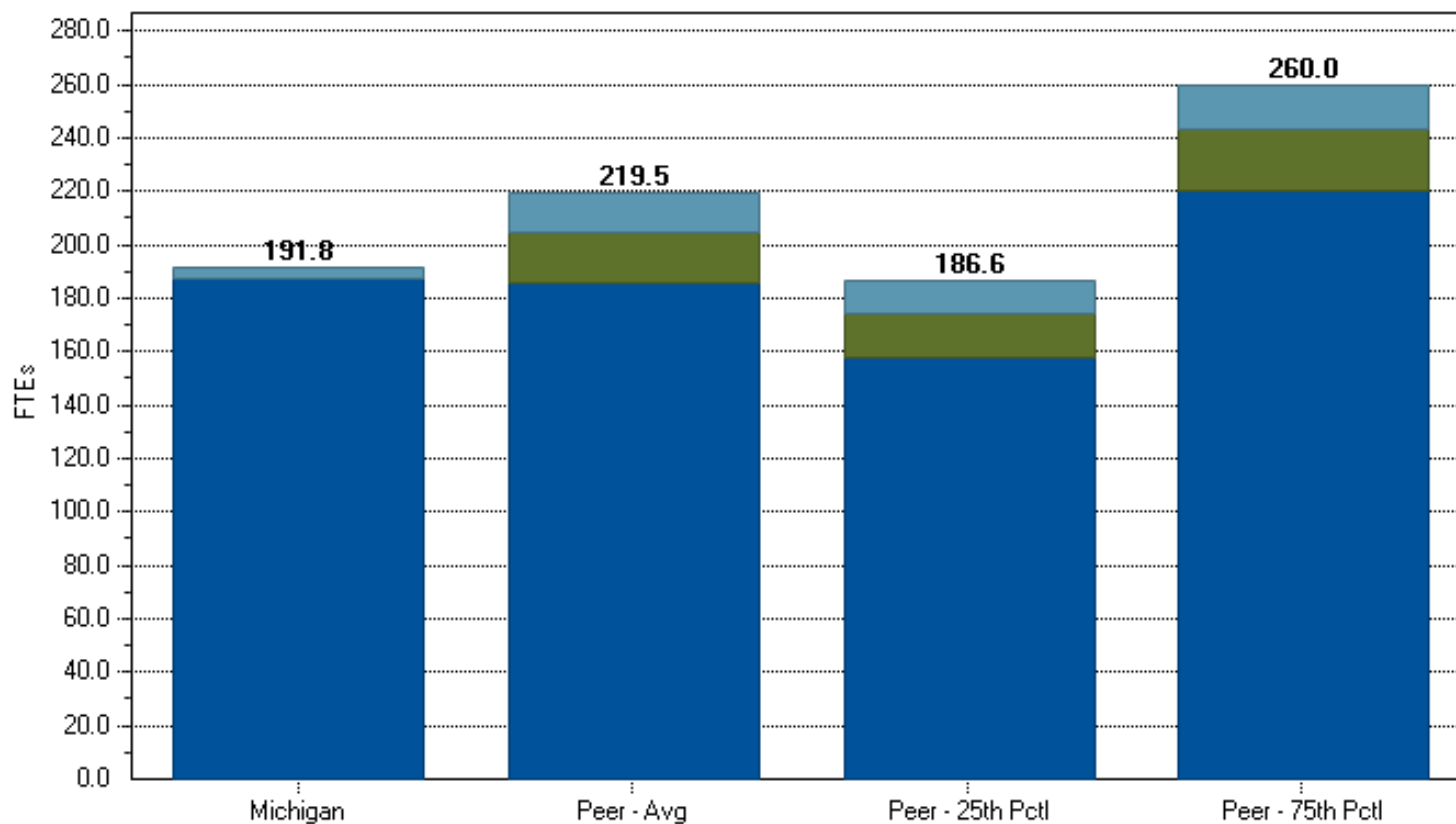
# Client and Peripheral Support

## Efficiency — Cost per Personal Computing Device



# Client and Peripheral Support

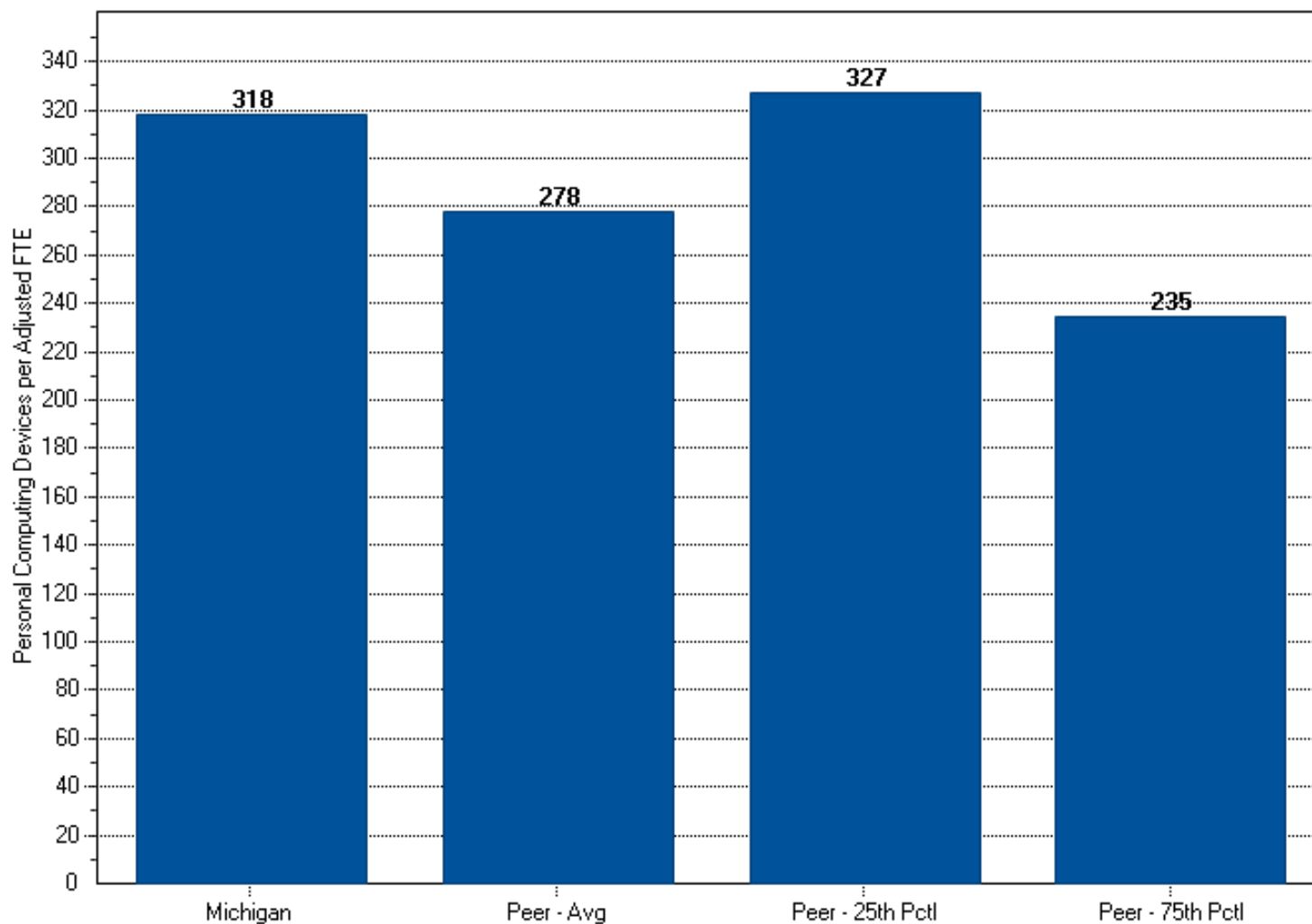
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	187.8	186.0	158.1	220.3
Outsource Equivalent	0.0	19.0	16.2	22.6
Contractor	4.0	14.5	12.3	17.1

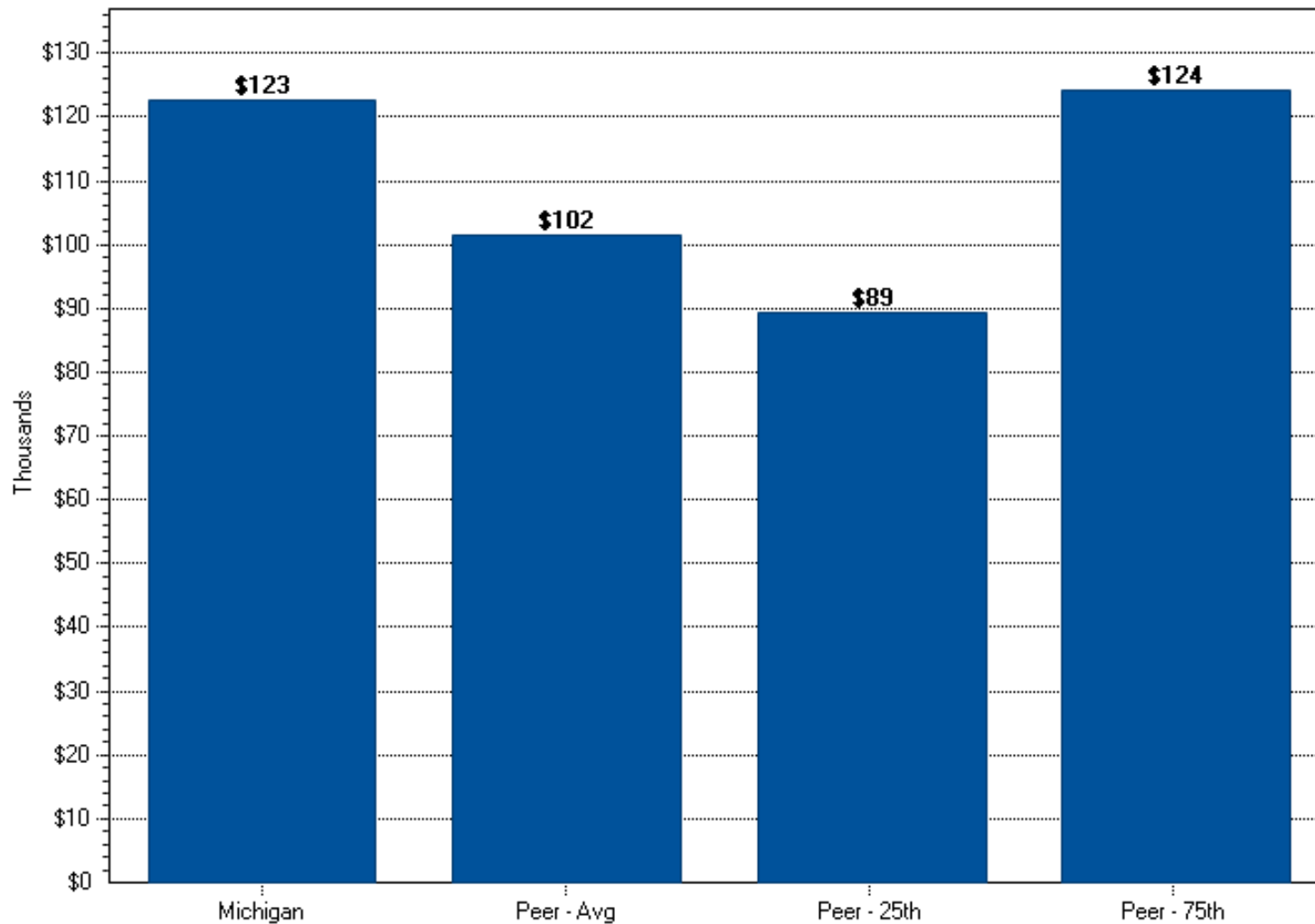
# Client and Peripheral Support

## Personal Computing Devices per Adjusted FTE



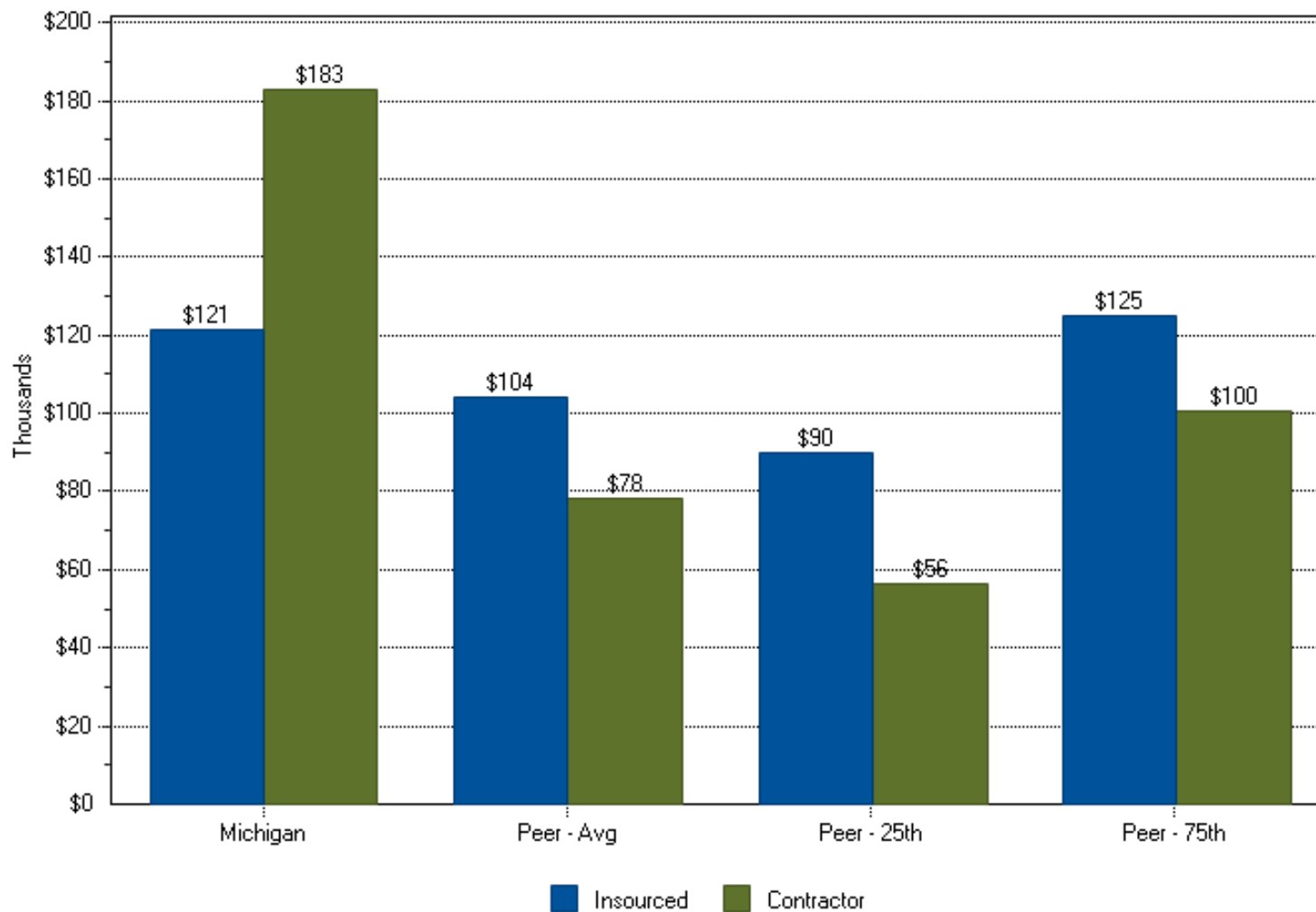
## Client and Peripheral Support

Cost per FTE — Insourced and Contractor Blended Total



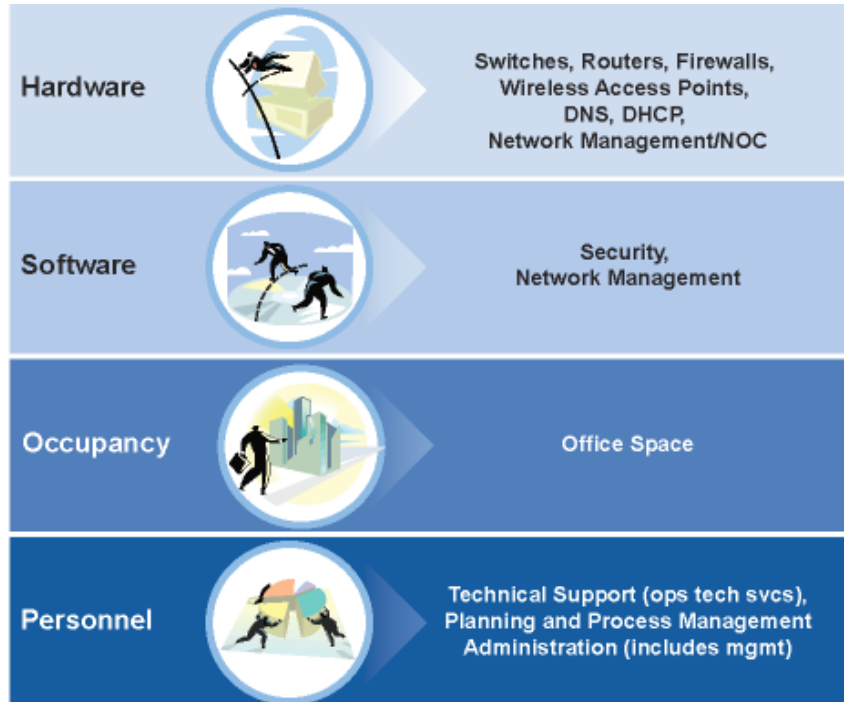
# Client and Peripheral Support

## Cost per FTE by Source



# Local-Area Network

## Scope



### ■ Scope

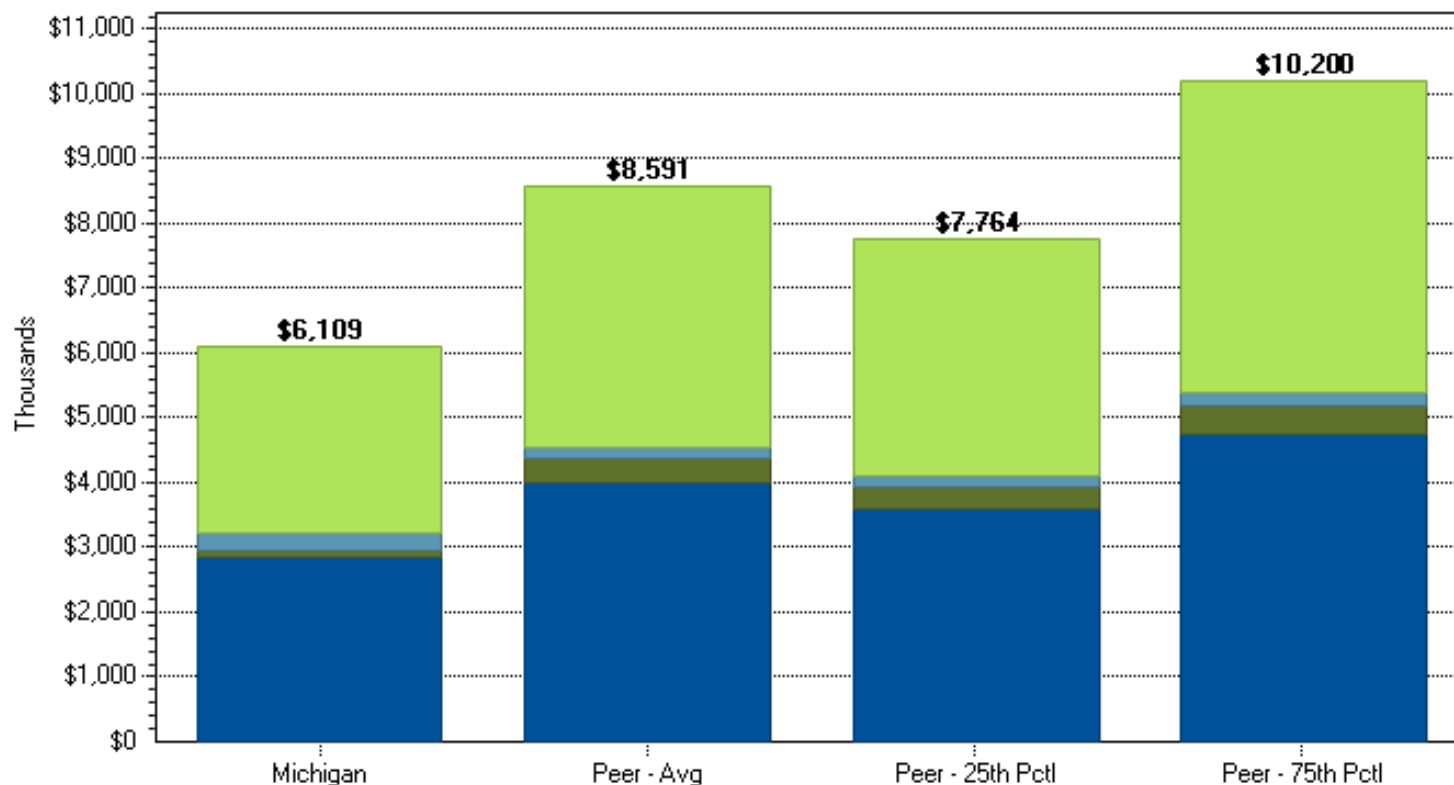
- Total Active Ports — 113,061
- Total Sites — 949
- FTEs before allocations — 19.16
- FTEs after allocations — 24.7
- Spending level — \$6.1M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of active ports and sites
- 3 Utilities, 2 Insurance, 2 Financial Services, 2 Healthcare, 1 Telecommunications

# Local-Area Network

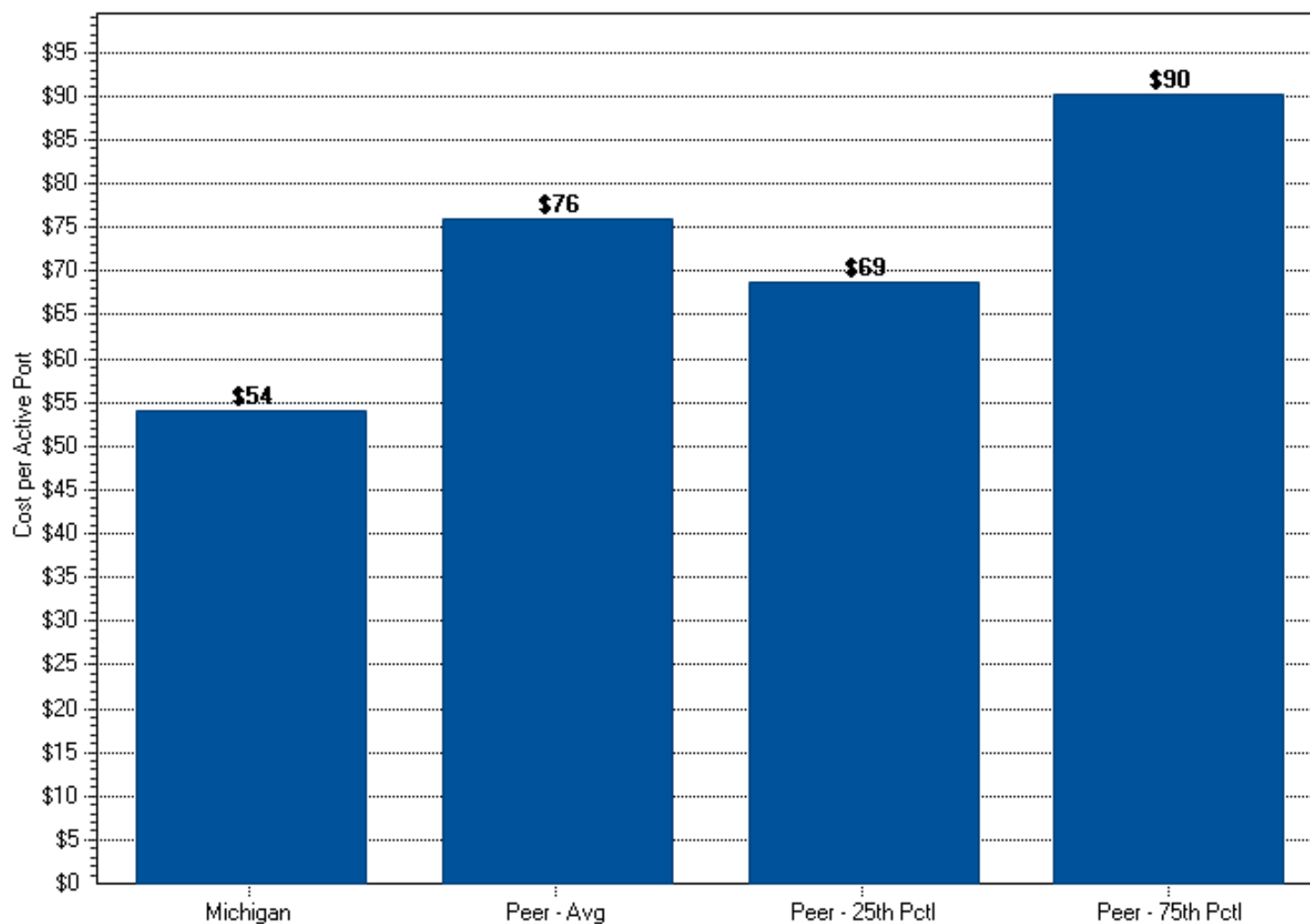
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$2,836	\$3,984	\$3,601	\$4,730
Software	\$121	\$375	\$339	\$446
Occupancy	\$258	\$172	\$155	\$204
Personnel	\$2,894	\$4,060	\$3,669	\$4,820

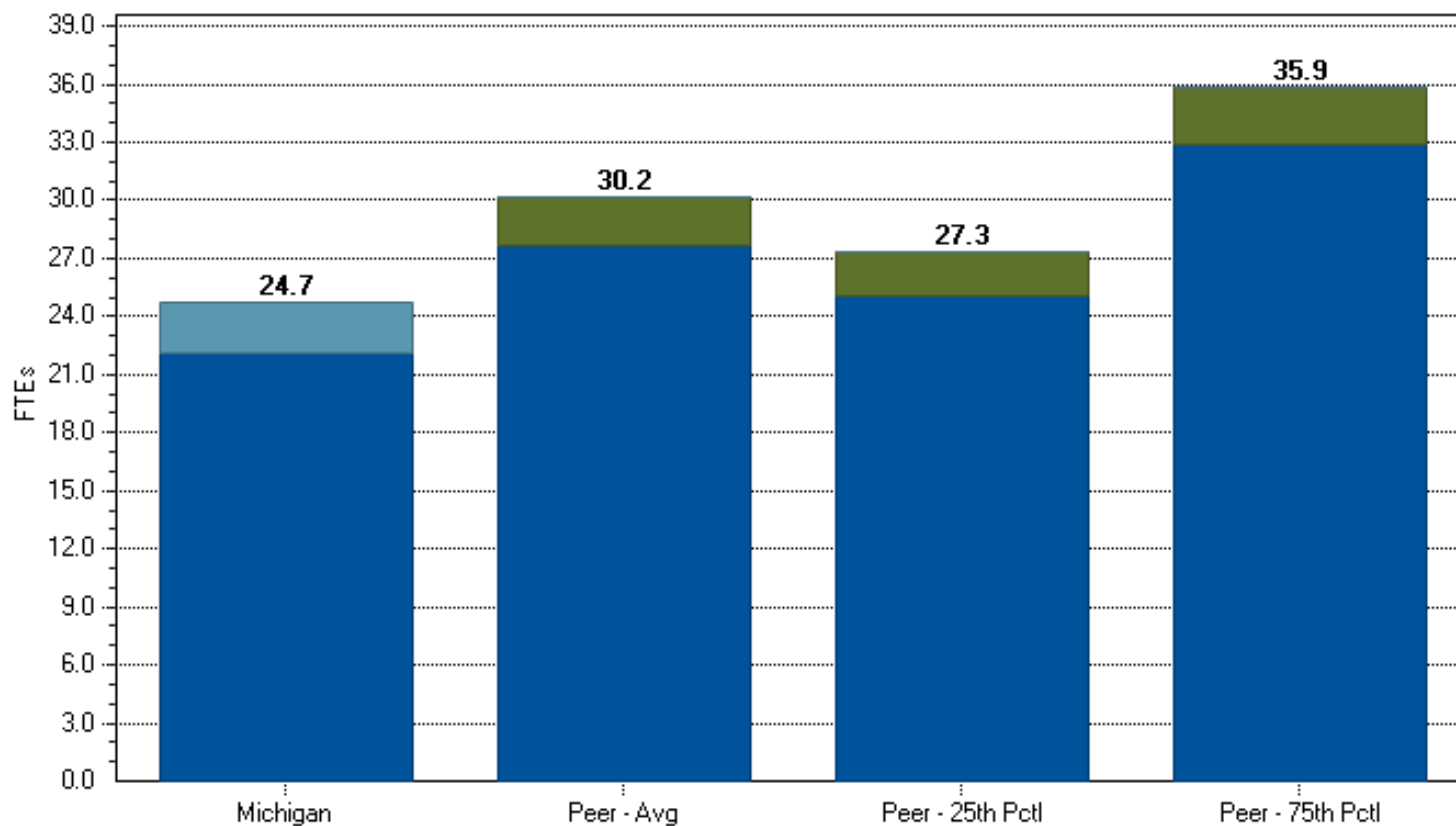
## Local-Area Network

### Efficiency — Cost per Active Port



## Local-Area Network

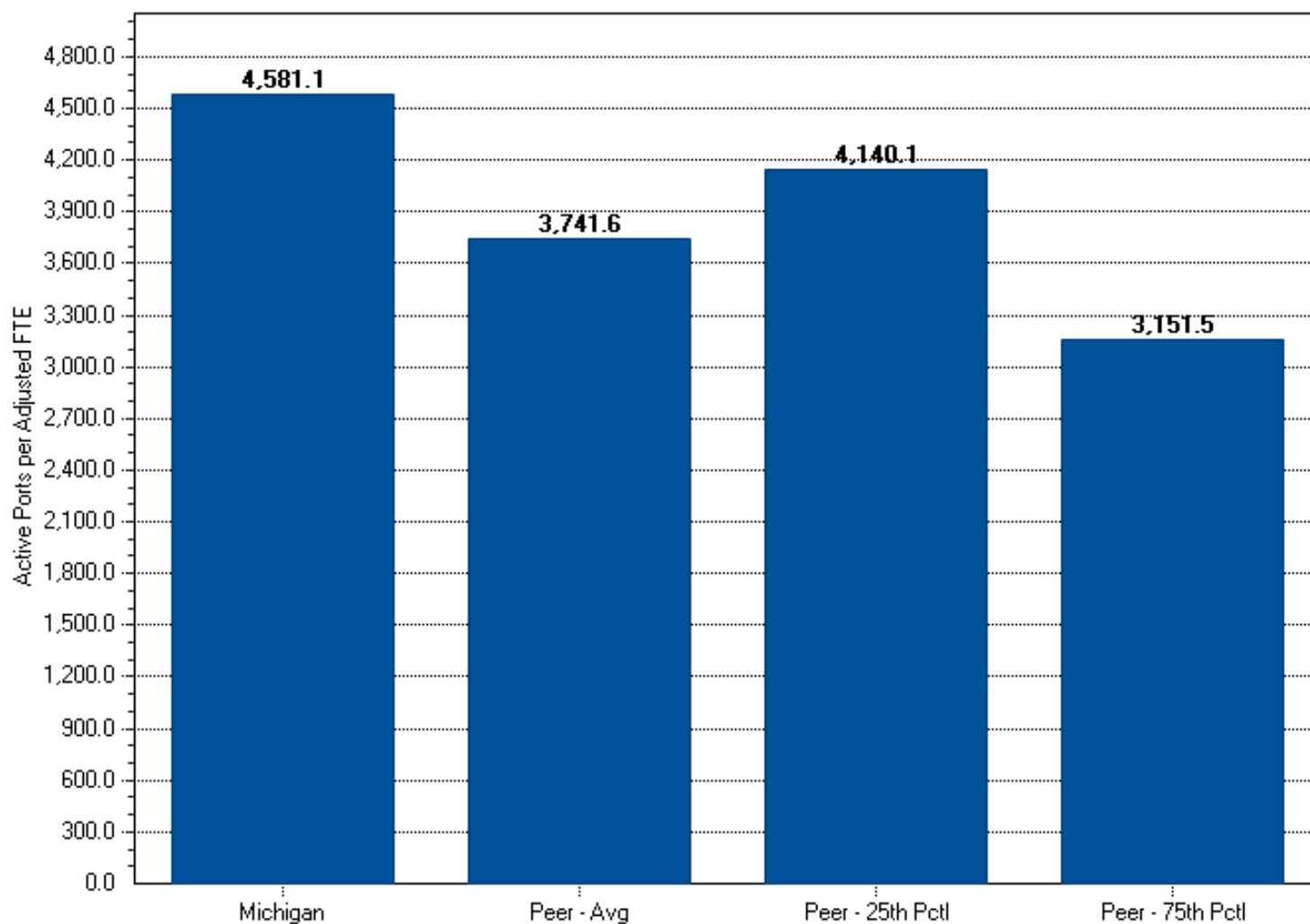
### IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	22.2	27.7	25.0	32.9
Outsource Equivalent	0.0	2.5	2.3	3.0
Contractor	2.5	0.0	0.0	0.0

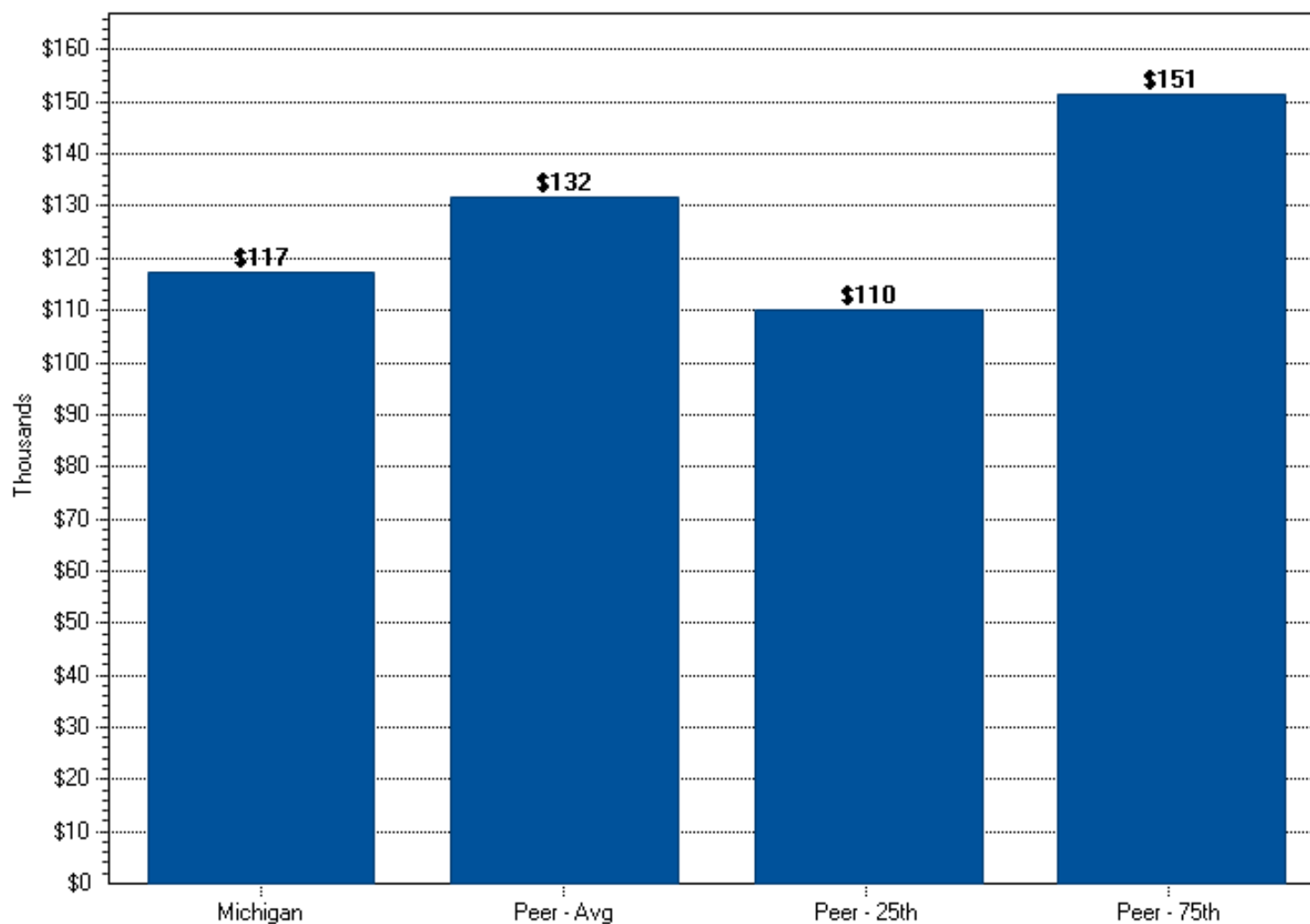
## Local-Area Network

Productivity — Active Ports per Adjusted FTE



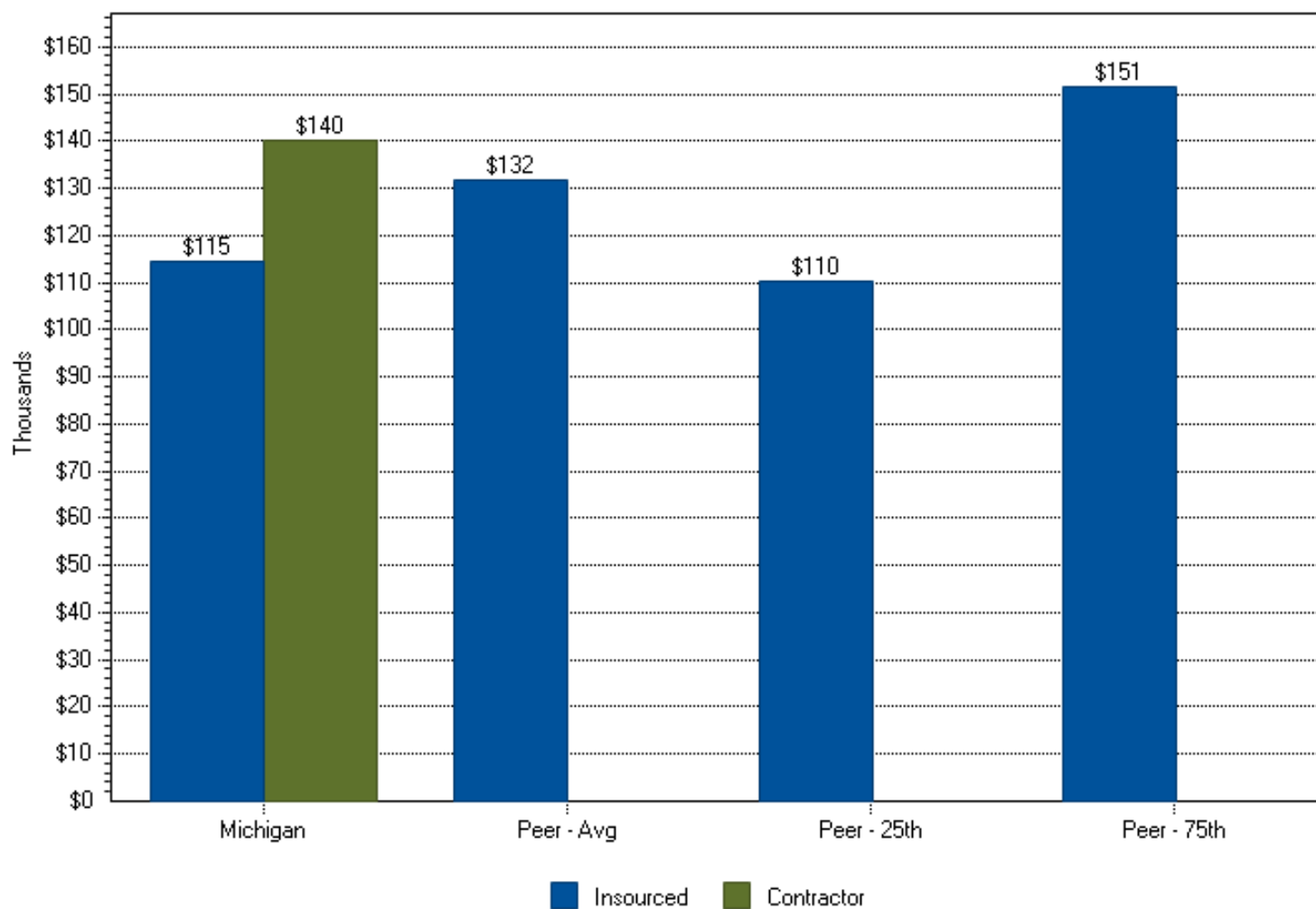
## Local-Area Network

Cost per FTE — Insourced and Contractor Blended Total



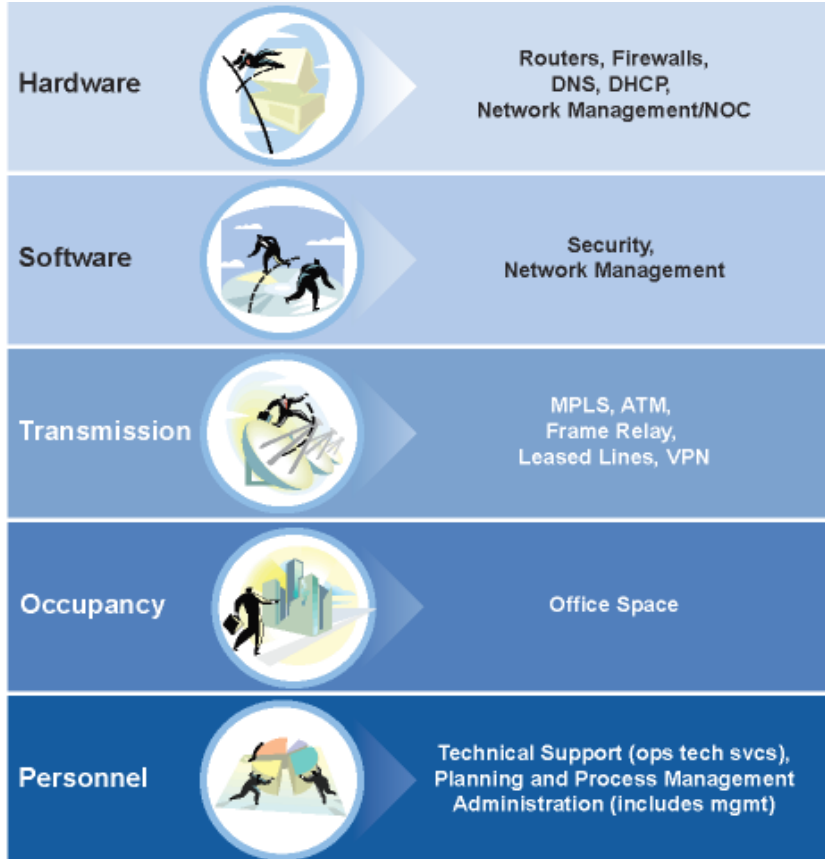
## Local-Area Network

### Cost per FTE by Source



# Wide-Area Data Network

## Scope



### ■ Scope

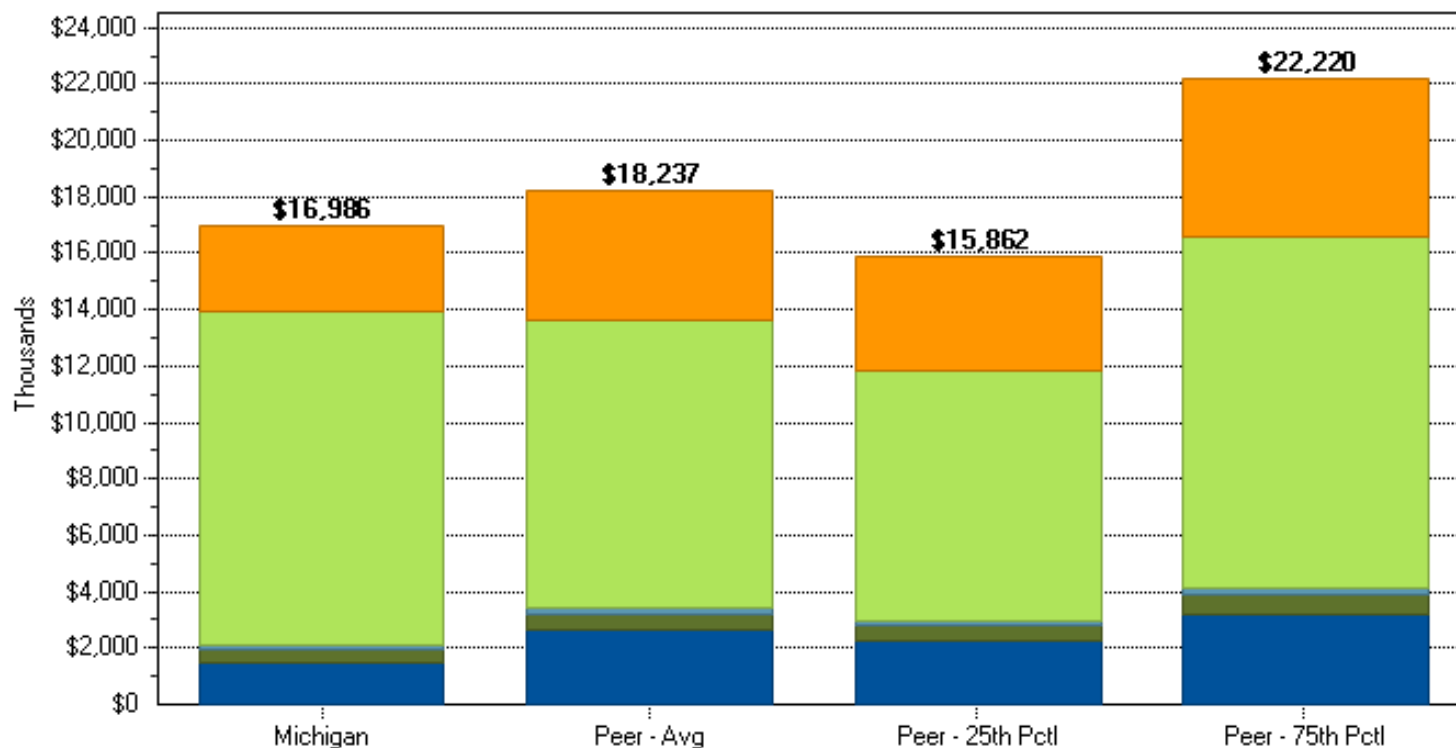
- Total Devices — 79,770 (estimated)
- Costs include MAN
- Total WAN Sites — 846
- Total MAN Sites — 90
- MAN FTEs before allocations — 13.3
- MAN FTEs after allocations — 13.6
- WAN FTEs before allocations — 14.9
- WAN FTEs after allocations — 16.6
- Spending level — \$17M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of devices, sites and traffic
- 8 Utilities, 2 Financial Services

# Wide-Area Data Network

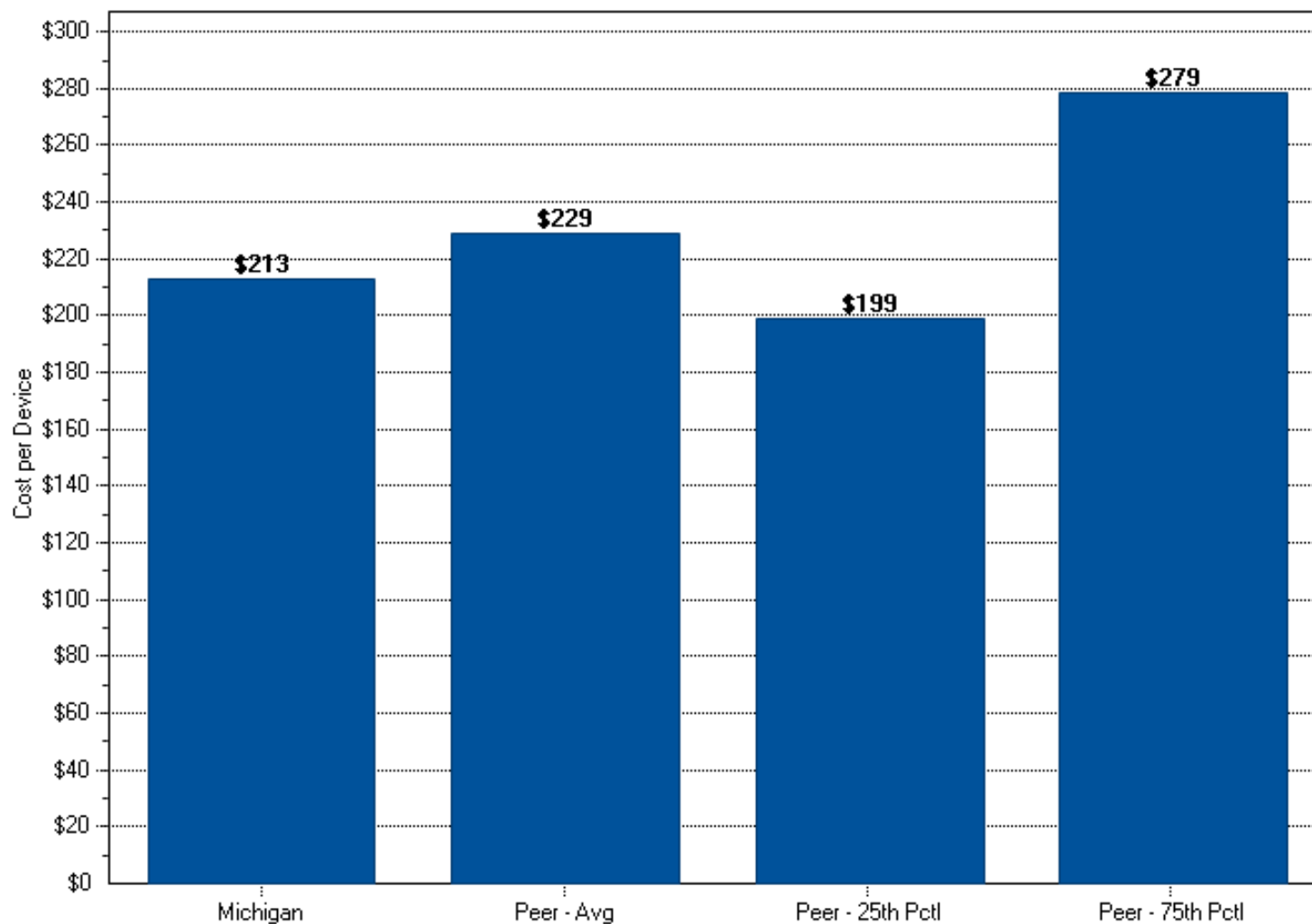
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$1,507	\$2,618	\$2,277	\$3,190
Software	\$404	\$600	\$522	\$731
Occupancy	\$168	\$195	\$169	\$237
Transmission	\$11,860	\$10,224	\$8,892	\$12,457
Personnel	\$3,047	\$4,600	\$4,001	\$5,605

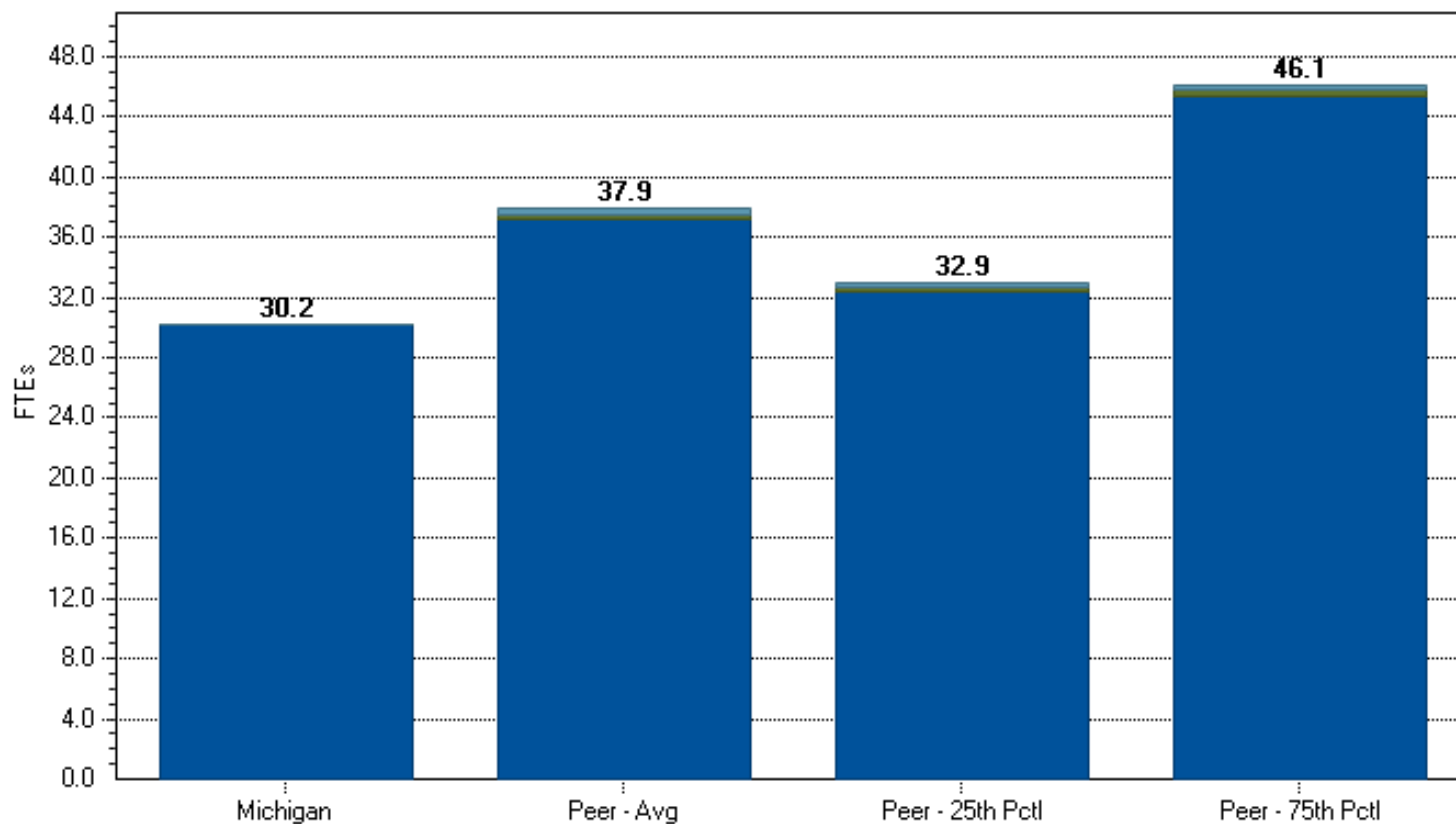
# Wide-Area Data Network

## Cost per Device



# Wide-Area Data Network

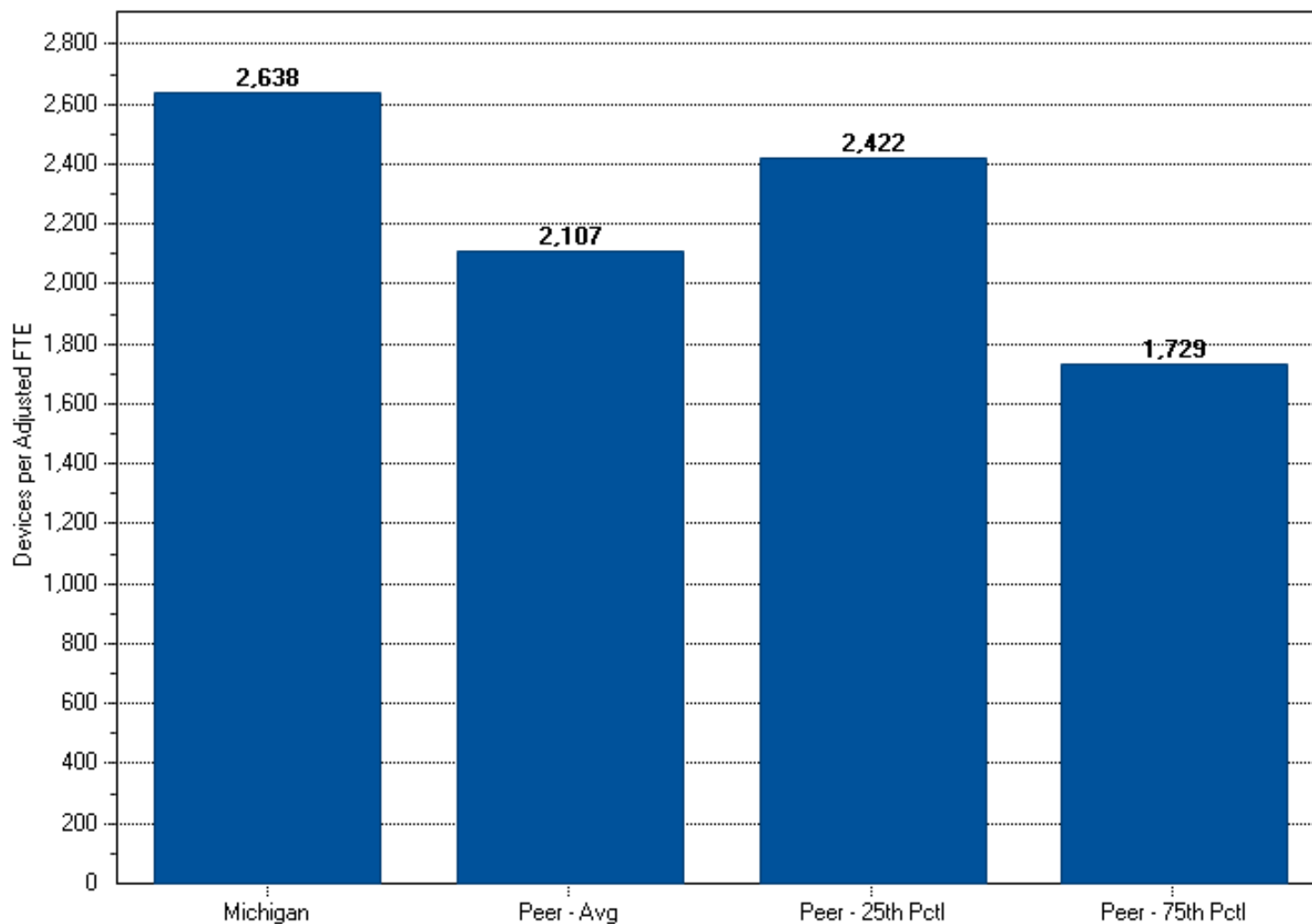
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	30.2	37.2	32.4	45.3
Outsource Equivalent	0.0	0.3	0.3	0.4
Contractor	0.0	0.3	0.3	0.4

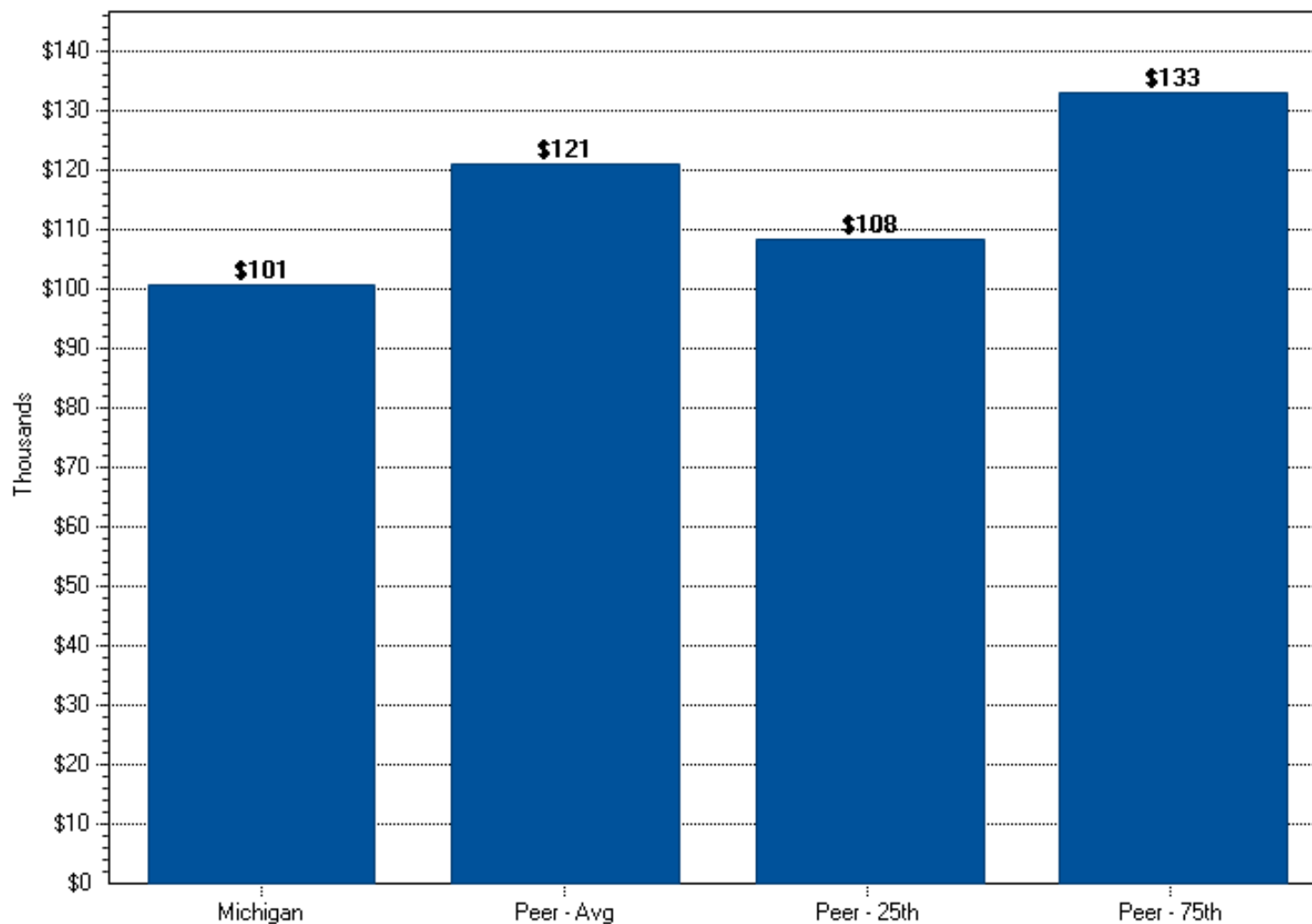
## Wide-Area Data Network

Productivity — Devices per Adjusted FTE



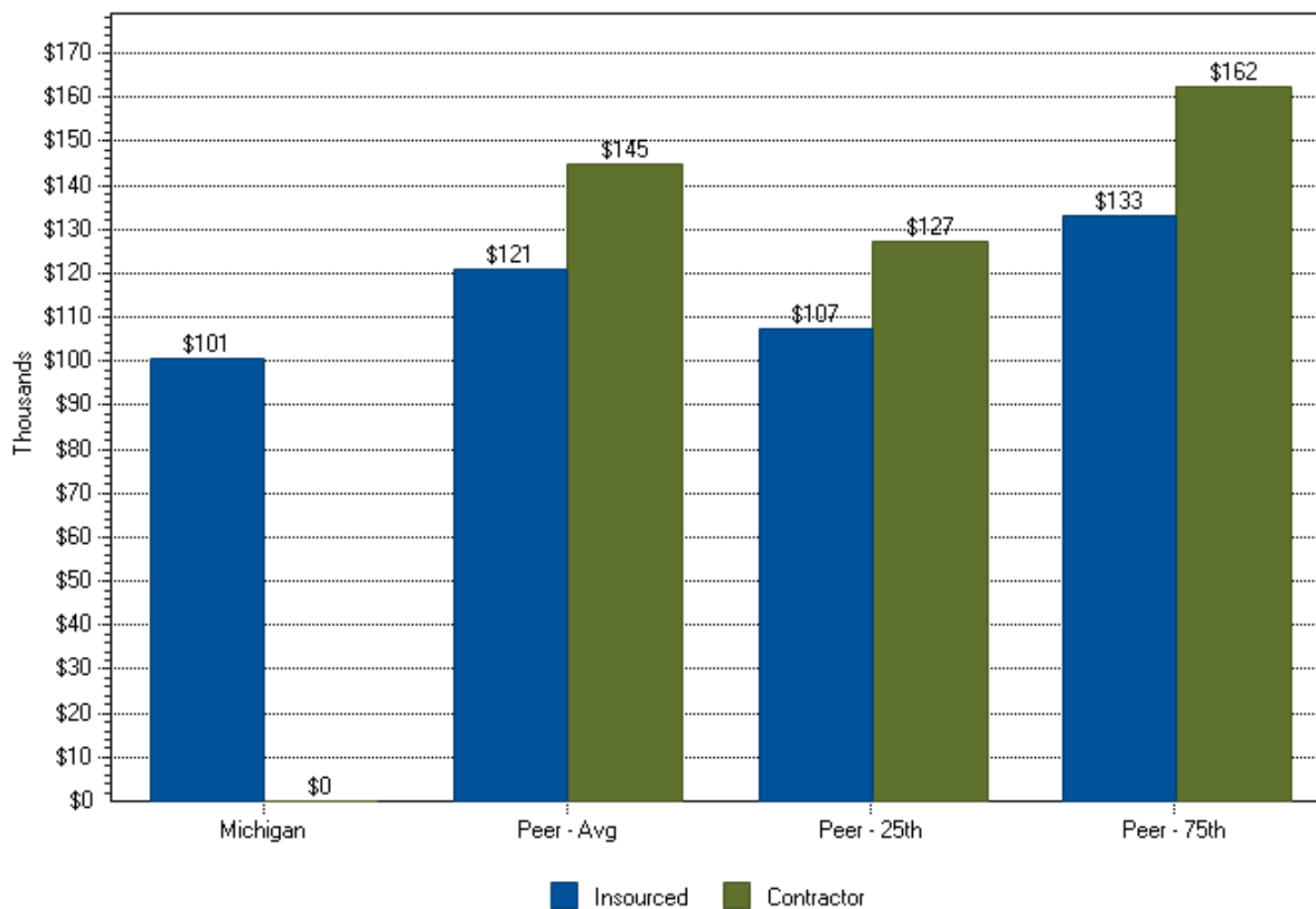
## Wide-Area Data Network

Cost per FTE — Insourced and Contractor Blended Total



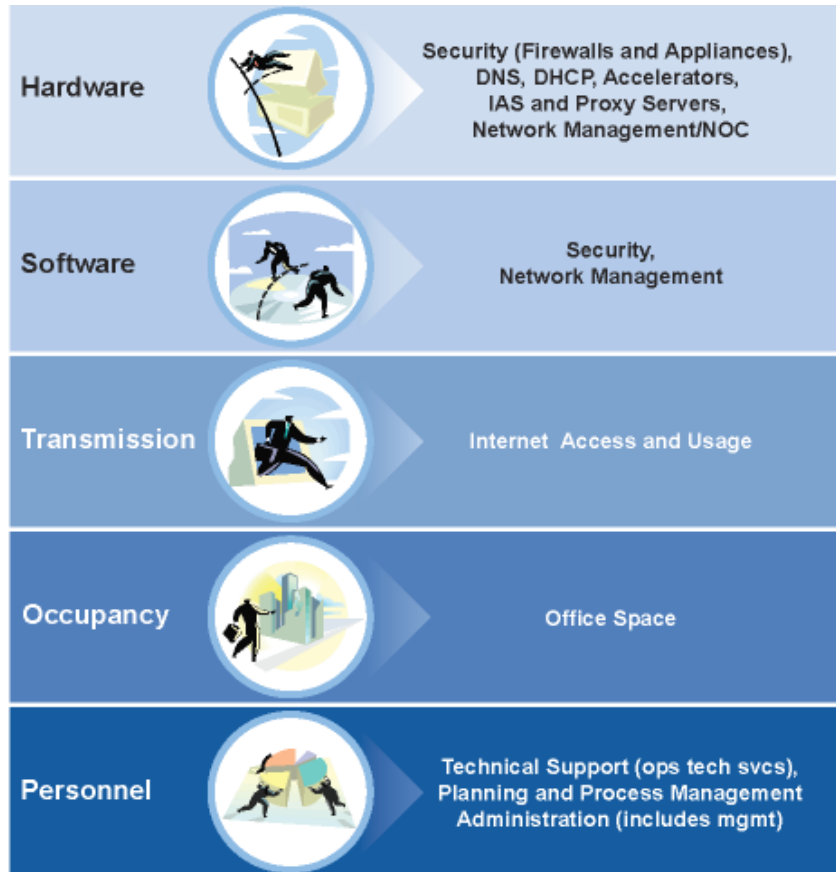
# Wide-Area Data Network

## Cost per FTE by Source



# Internet Access

## Scope



### ■ Scope

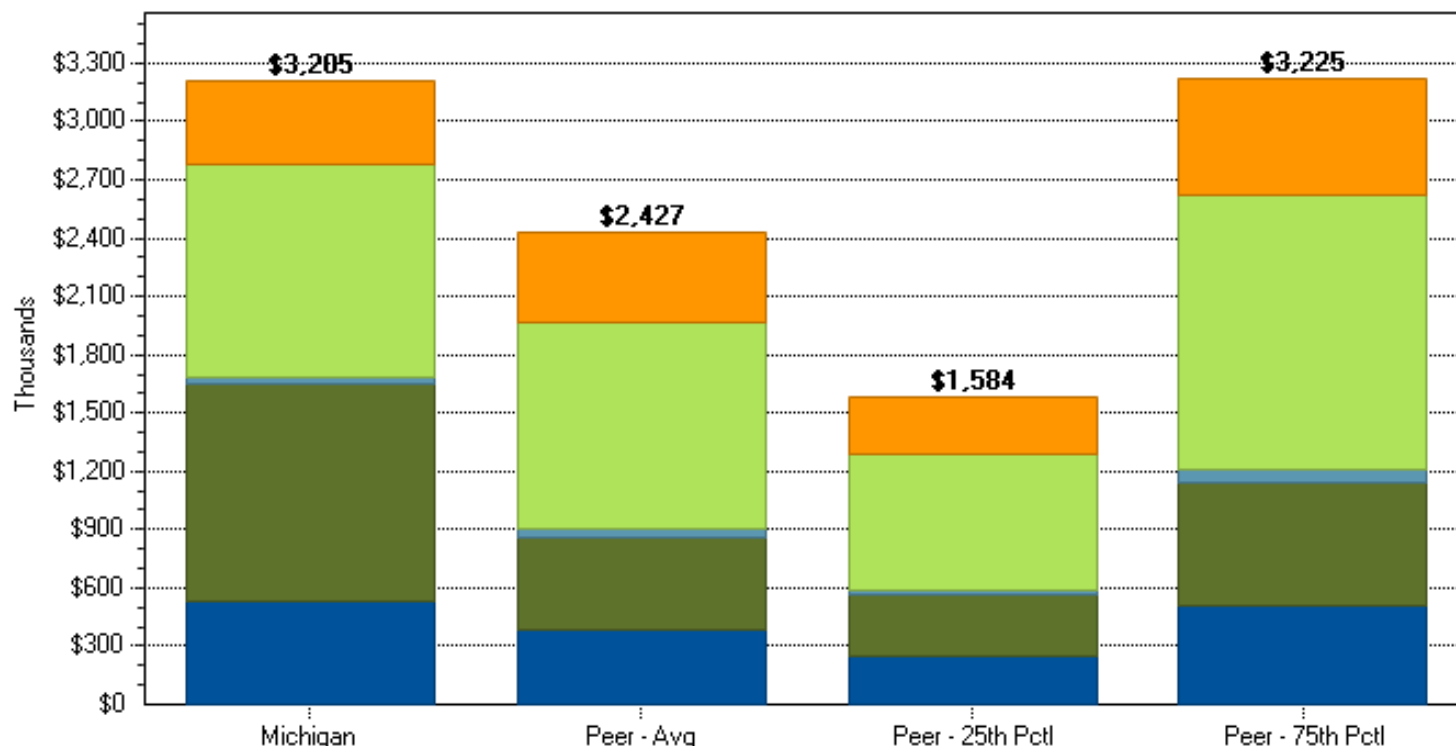
- Total GB Traffic — 575,664
- FTEs before allocations — 7.4
- FTEs after allocations — 10.7
- Spending level — \$3.2M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar amount of total Internet traffic
- 4 Utilities, 2 Healthcare, 1 Telecommunications, 1 Consumer Goods, 1 Public Sector

# Internet Access

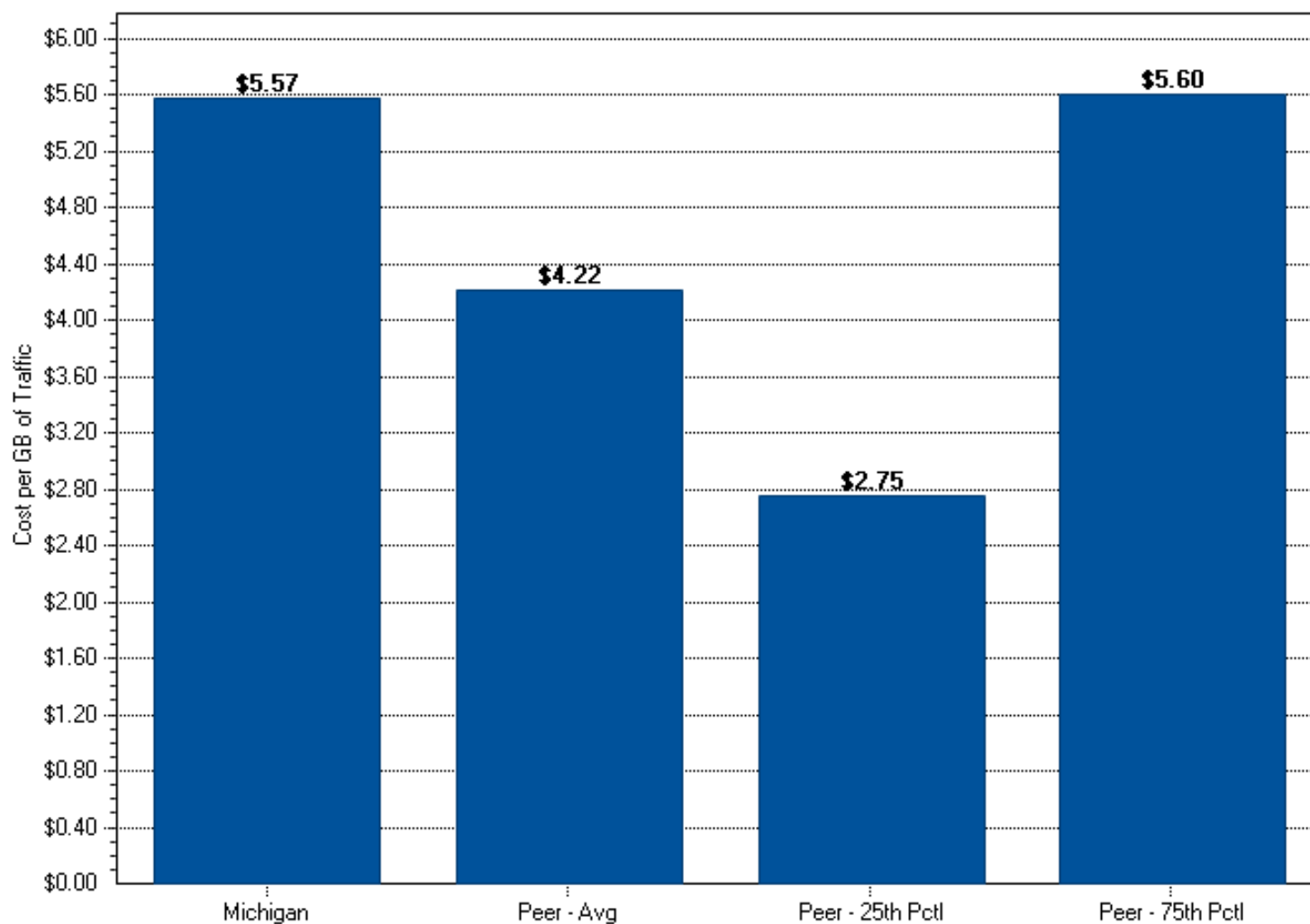
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$526	\$381	\$249	\$507
Software	\$1,125	\$480	\$313	\$638
Occupancy	\$37	\$47	\$31	\$63
Personnel	\$1,097	\$1,062	\$693	\$1,412
Transmission	\$420	\$456	\$297	\$606

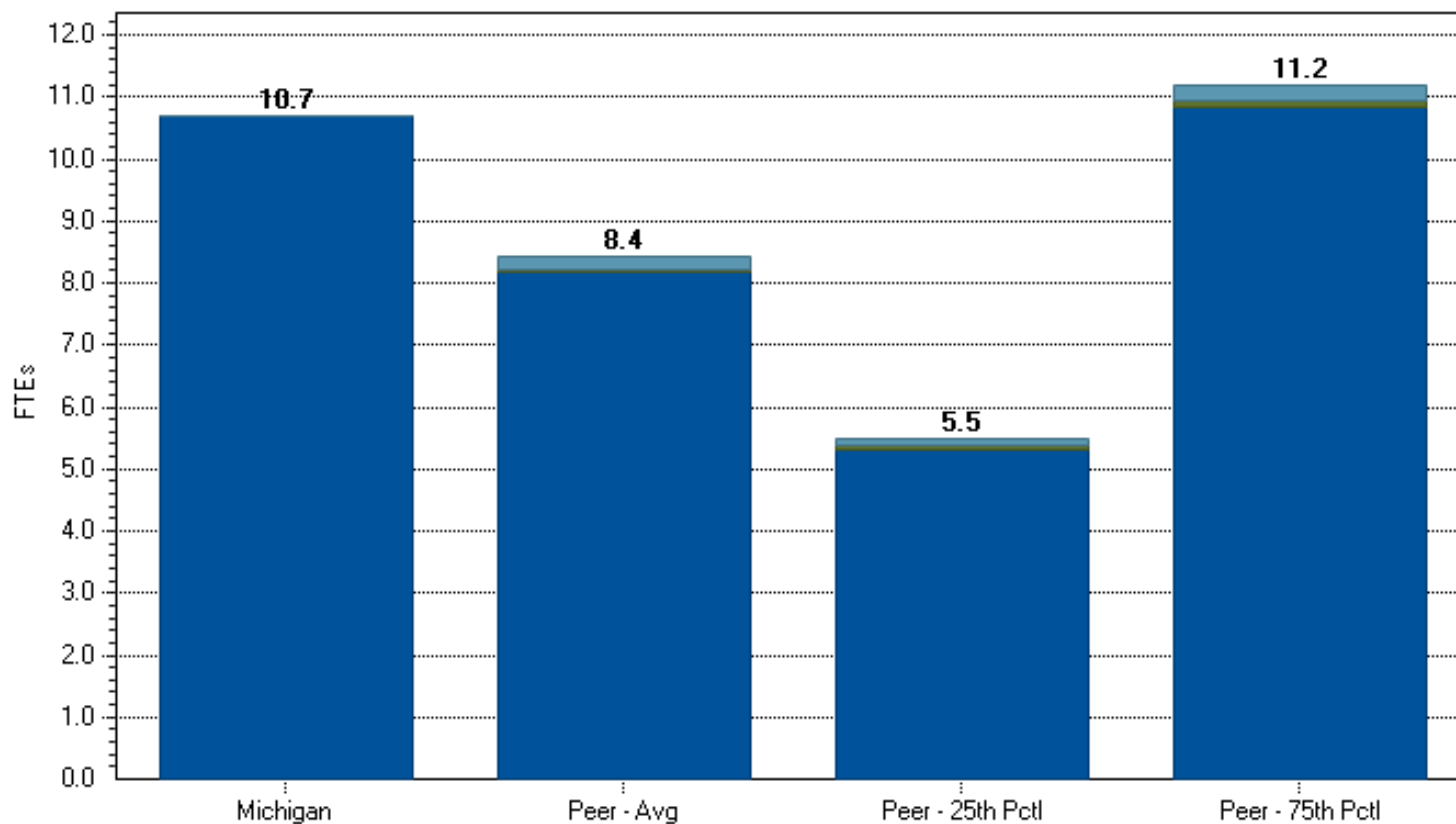
## Internet Access

Efficiency — Cost per Traffic GB



## Internet Access

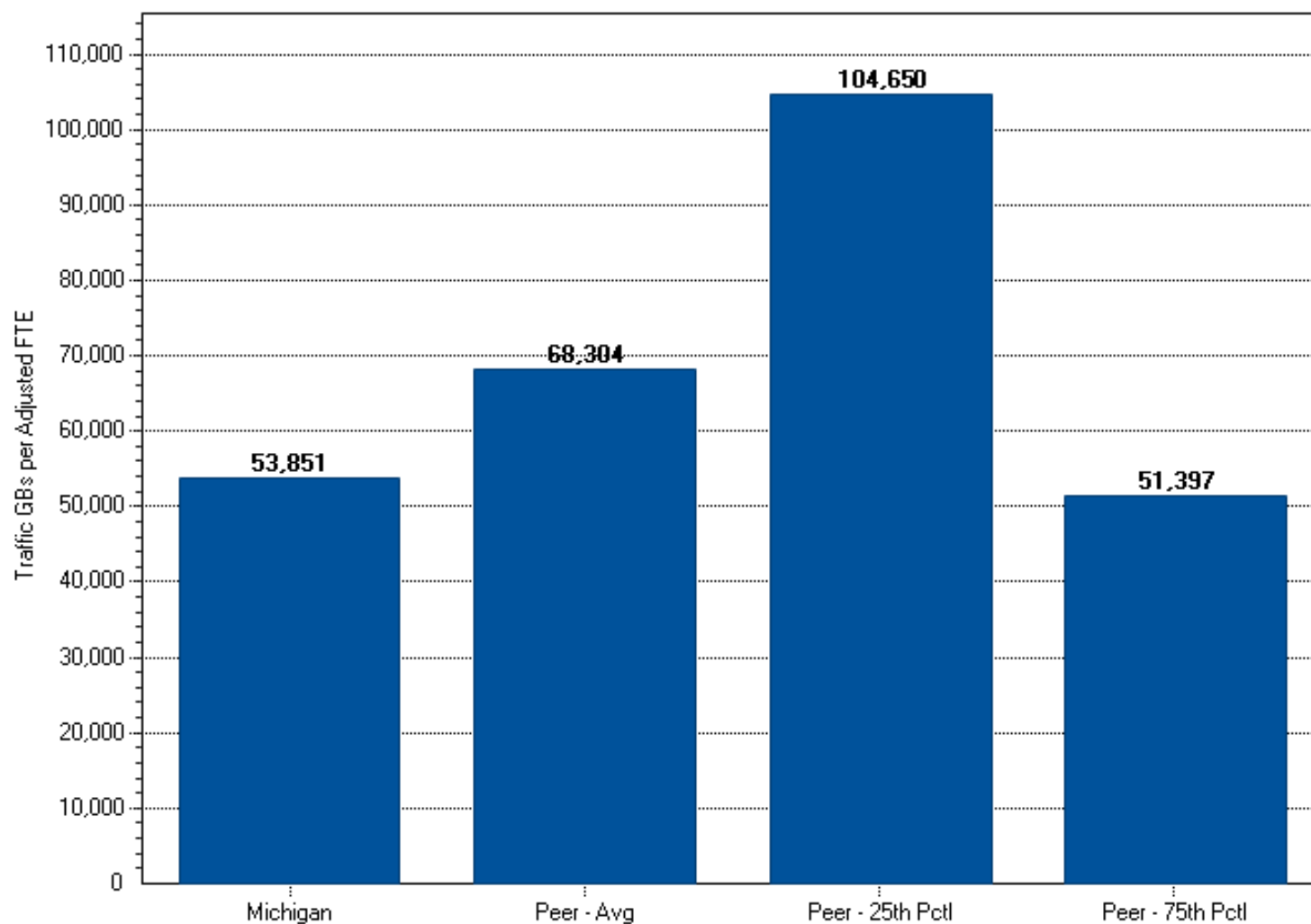
### IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	10.7	8.2	5.3	10.8
Outsource Equivalent	0.0	0.1	0.0	0.1
Contractor	0.0	0.2	0.1	0.3

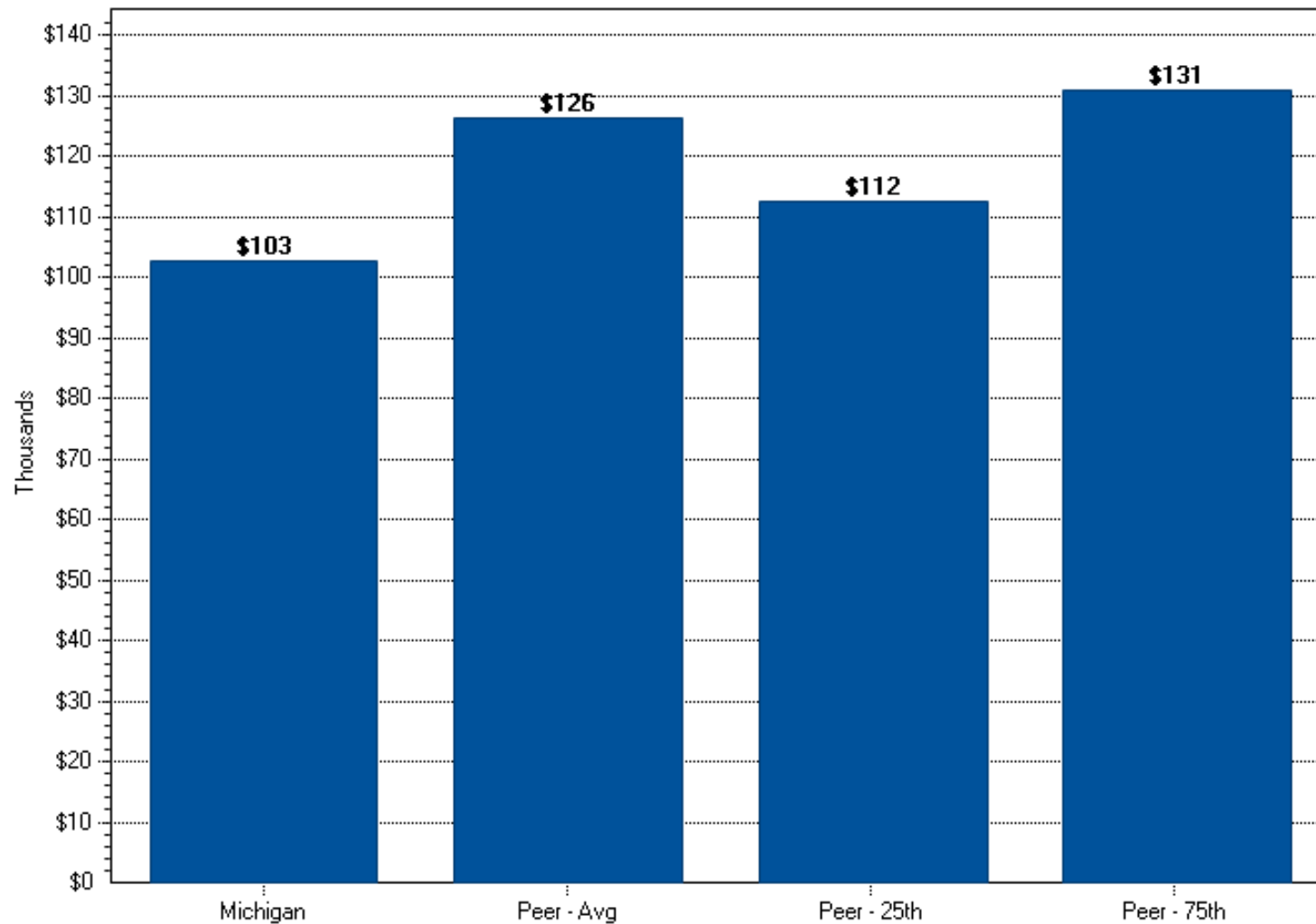
## Internet Access

Productivity — Traffic GB per Adjusted FTE



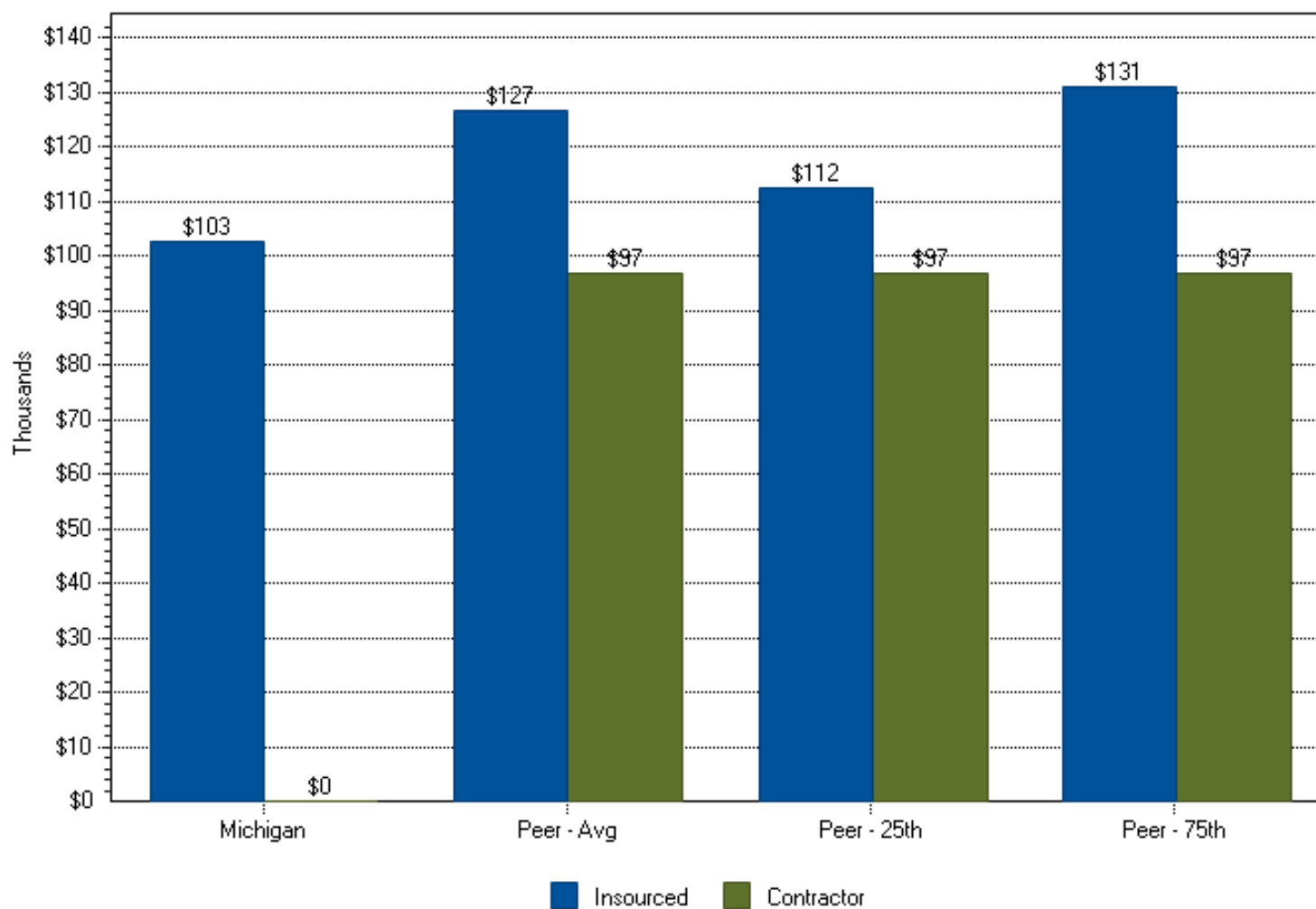
## Internet Access

Cost per FTE — Insourced and Contractor Blended Total



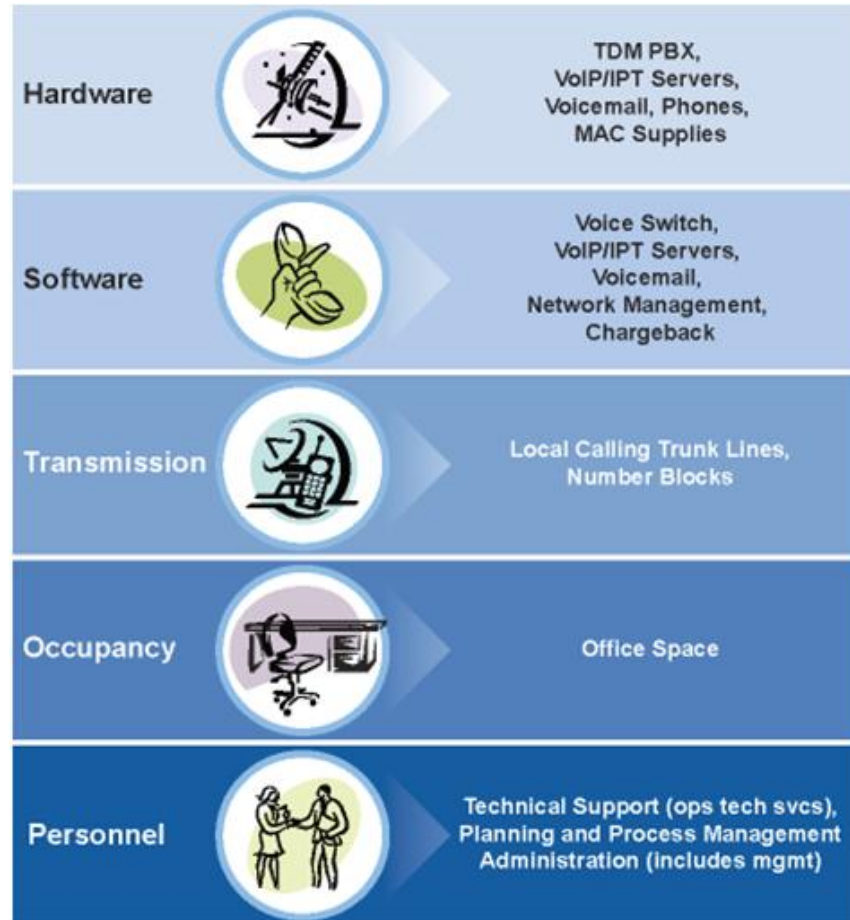
## Internet Access

### Cost per FTE by Source



# Voice Premise Technology

## Scope



### ■ Scope

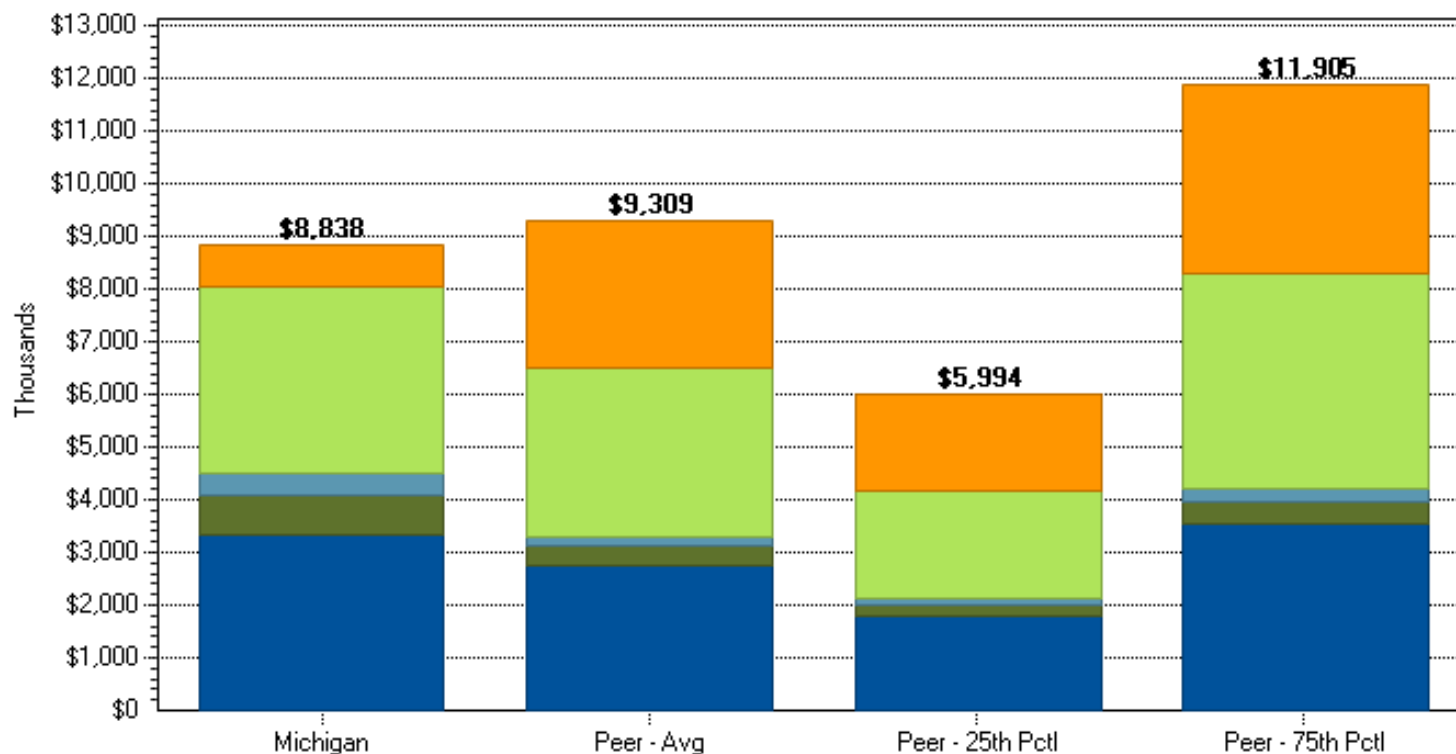
- Total Extensions — 46,000
- FTEs before allocations — 28.96
- FTEs after allocations — 37.8
- Spending level — \$8.8M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar amount of total extensions and sites
- 3 Utilities, 2 Insurance, 2 Financial Services

# Voice Premise Technology

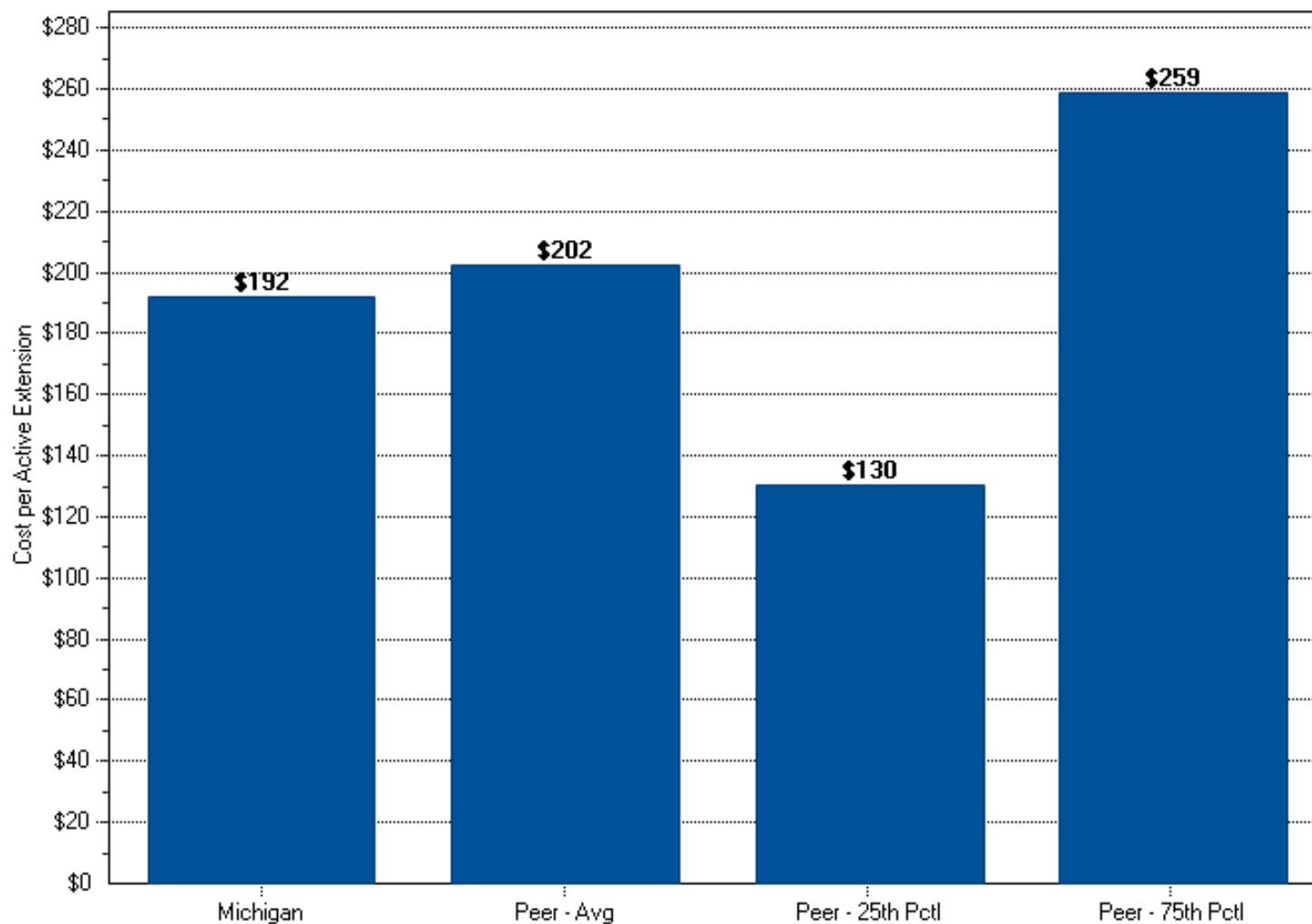
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$3,338	\$2,765	\$1,780	\$3,536
Software	\$731	\$345	\$222	\$442
Occupancy	\$450	\$183	\$118	\$234
Personnel	\$3,510	\$3,212	\$2,068	\$4,107
Transmission	\$809	\$2,804	\$1,805	\$3,586

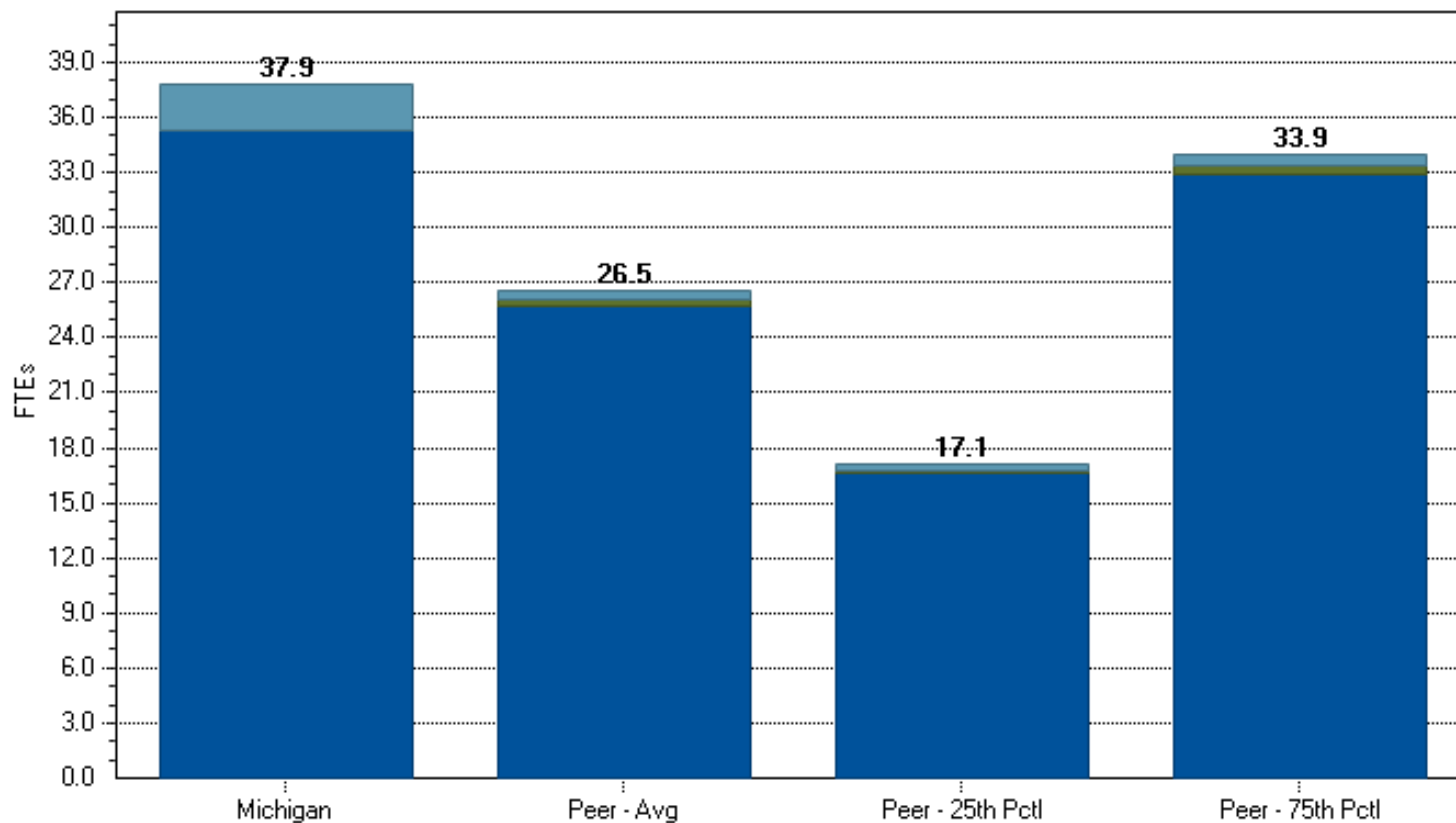
# Voice Premise Technology

## Efficiency — Cost per Extension



# Voice Premise Technology

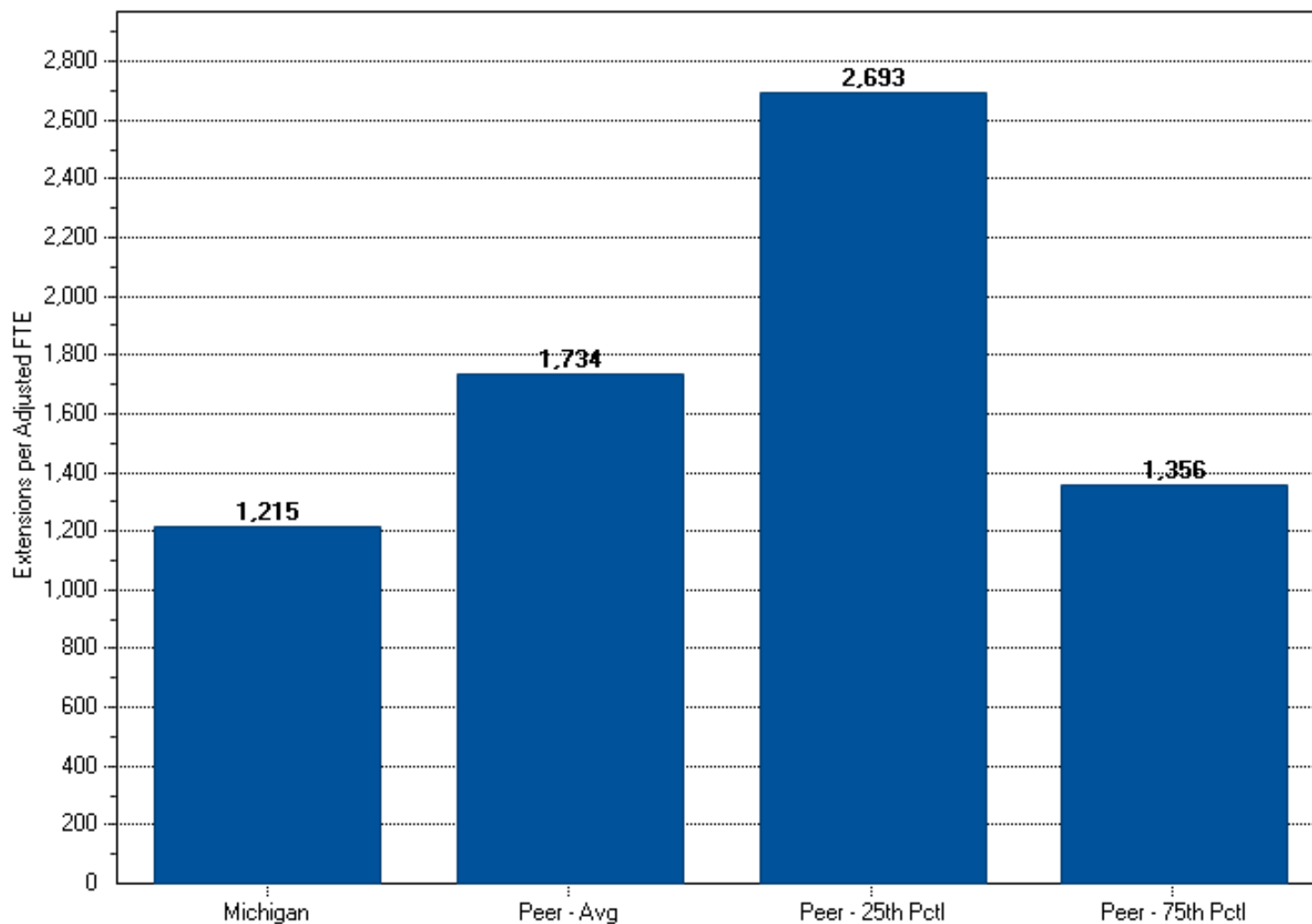
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	35.3	25.7	16.6	32.9
Outsource Equivalent	0.0	0.3	0.2	0.4
Contractor	2.6	0.4	0.3	0.6

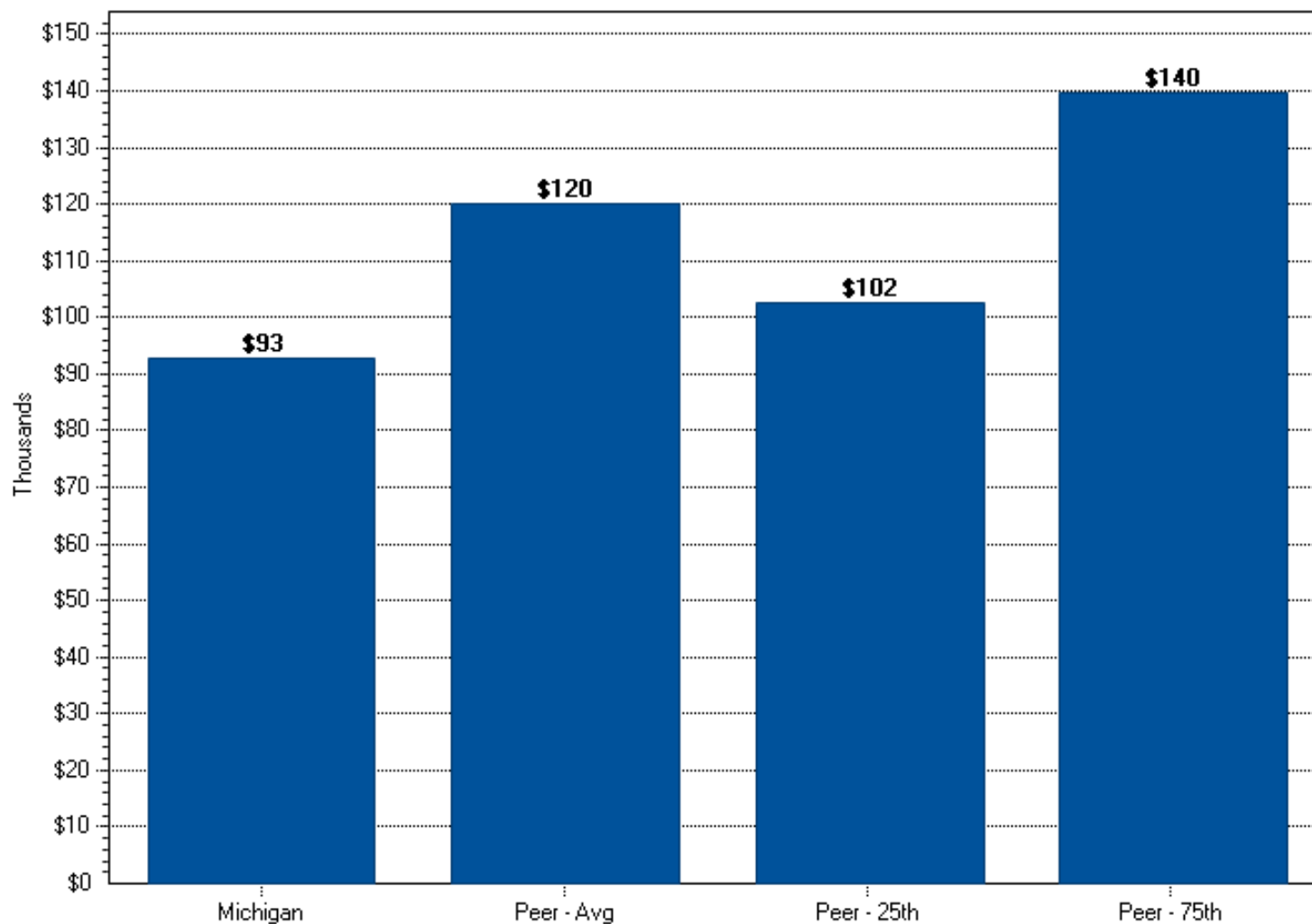
# Voice Premise Technology

## Productivity — Extensions per Adjusted FTE



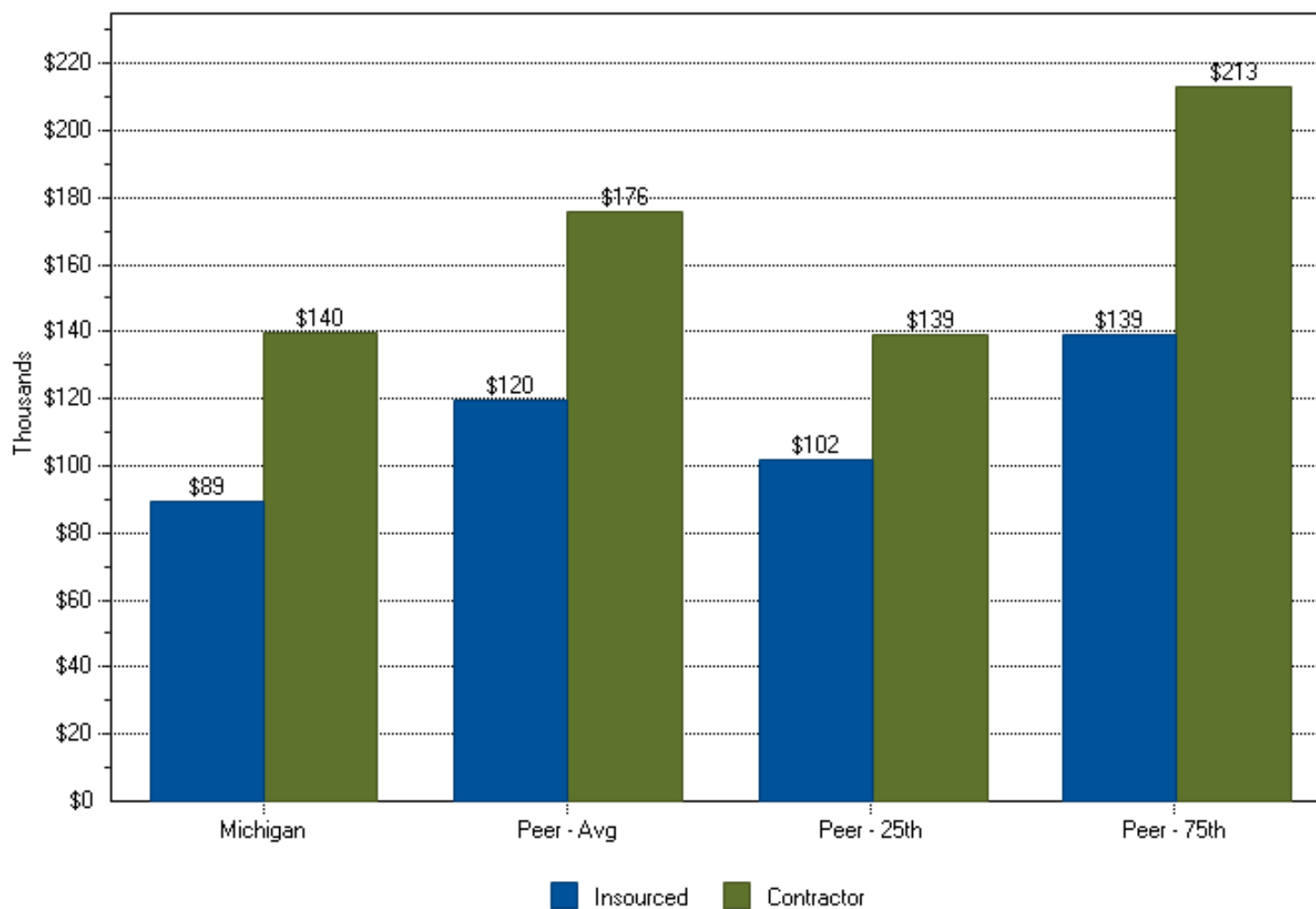
## Voice Premise Technology

Cost per FTE — Insourced and Contractor Blended Total



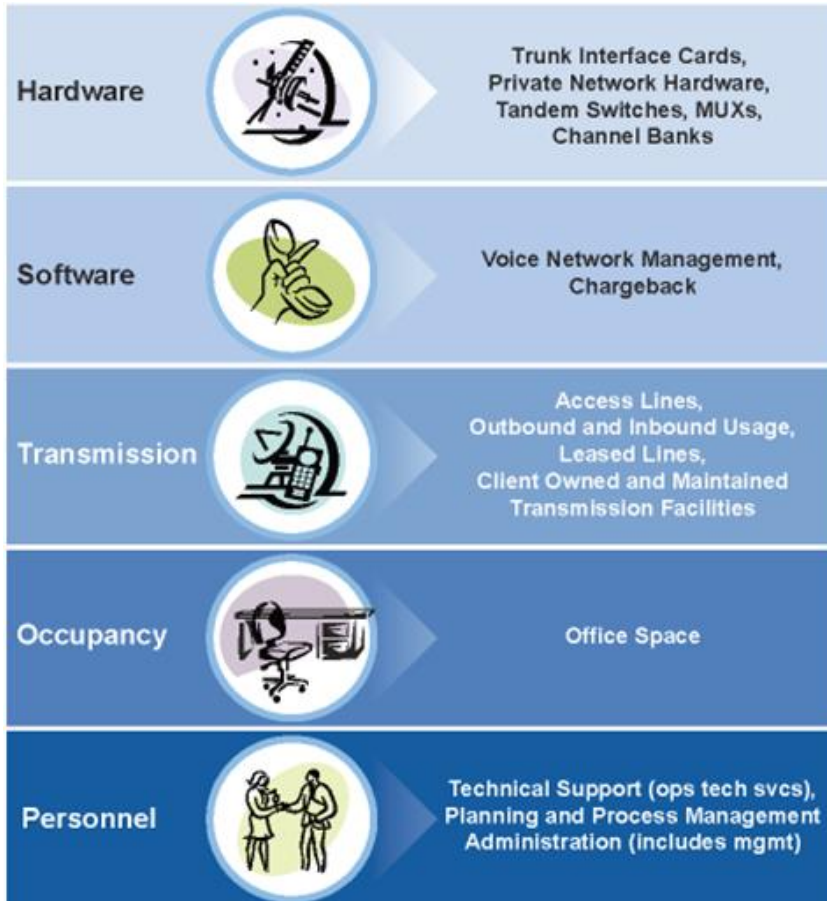
# Voice Premise Technology

## Cost per FTE by Source



# Voice Network

## Scope



### ■ Scope

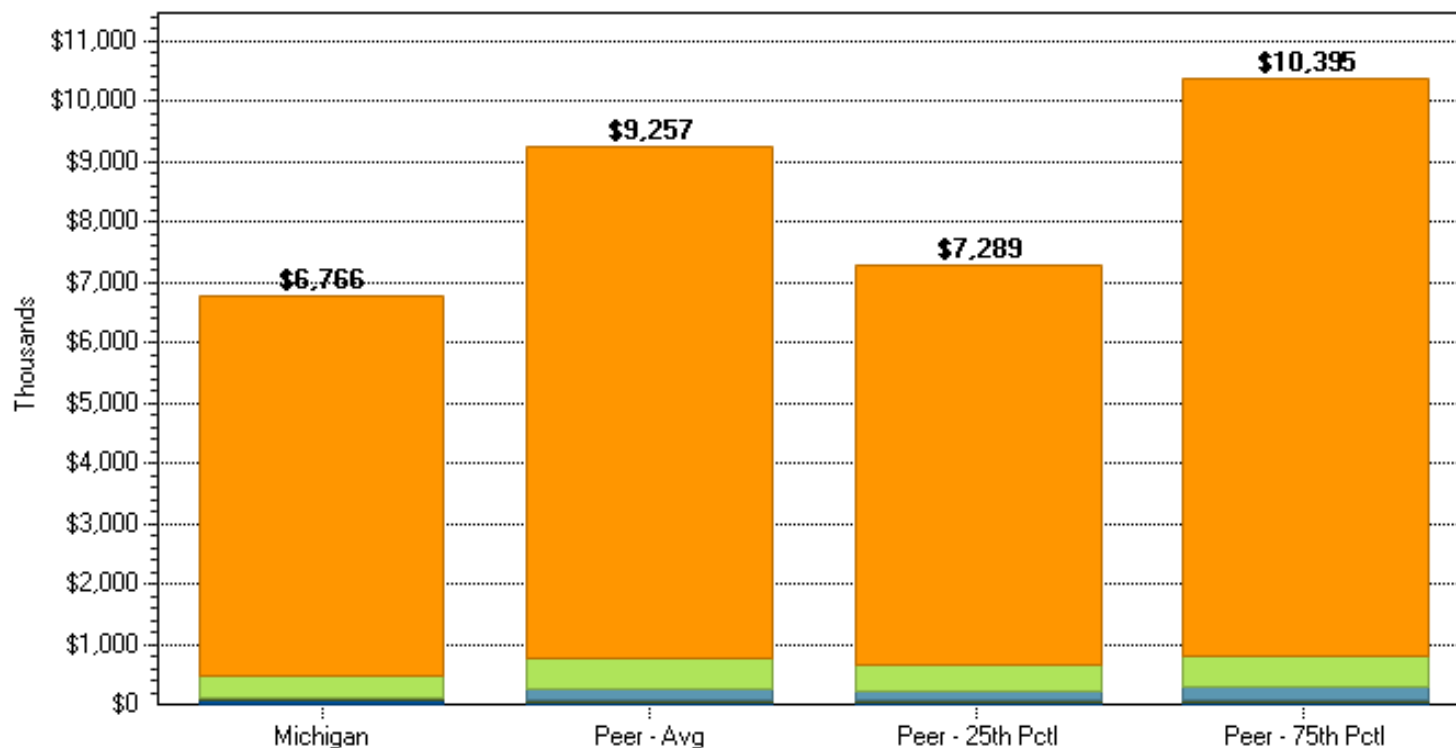
- Total Minutes — 329,617,976
- FTEs before allocations — 1.3
- FTEs after allocations — 2.3
- Spending level — \$6.8M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar amount of total minutes and distribution of inbound and outbound minutes
- 4 Utilities, 3 Insurance, 2 Financial Services, 1 Healthcare

# Voice Network

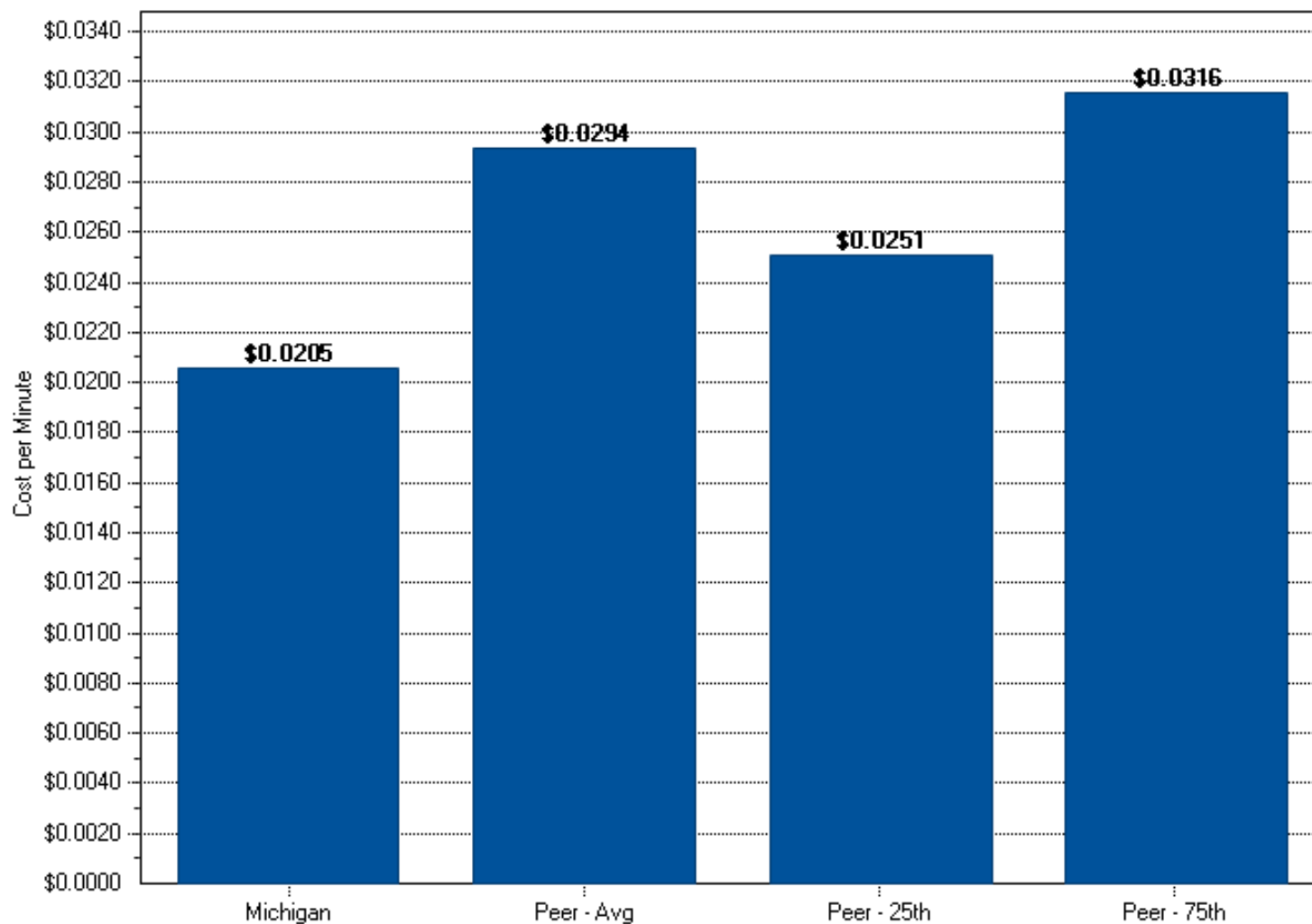
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$71	\$28	\$24	\$30
Software	\$24	\$39	\$33	\$42
Occupancy	\$17	\$206	\$176	\$222
Personnel	\$375	\$479	\$409	\$515
Transmission	\$6,278	\$8,505	\$6,648	\$9,586

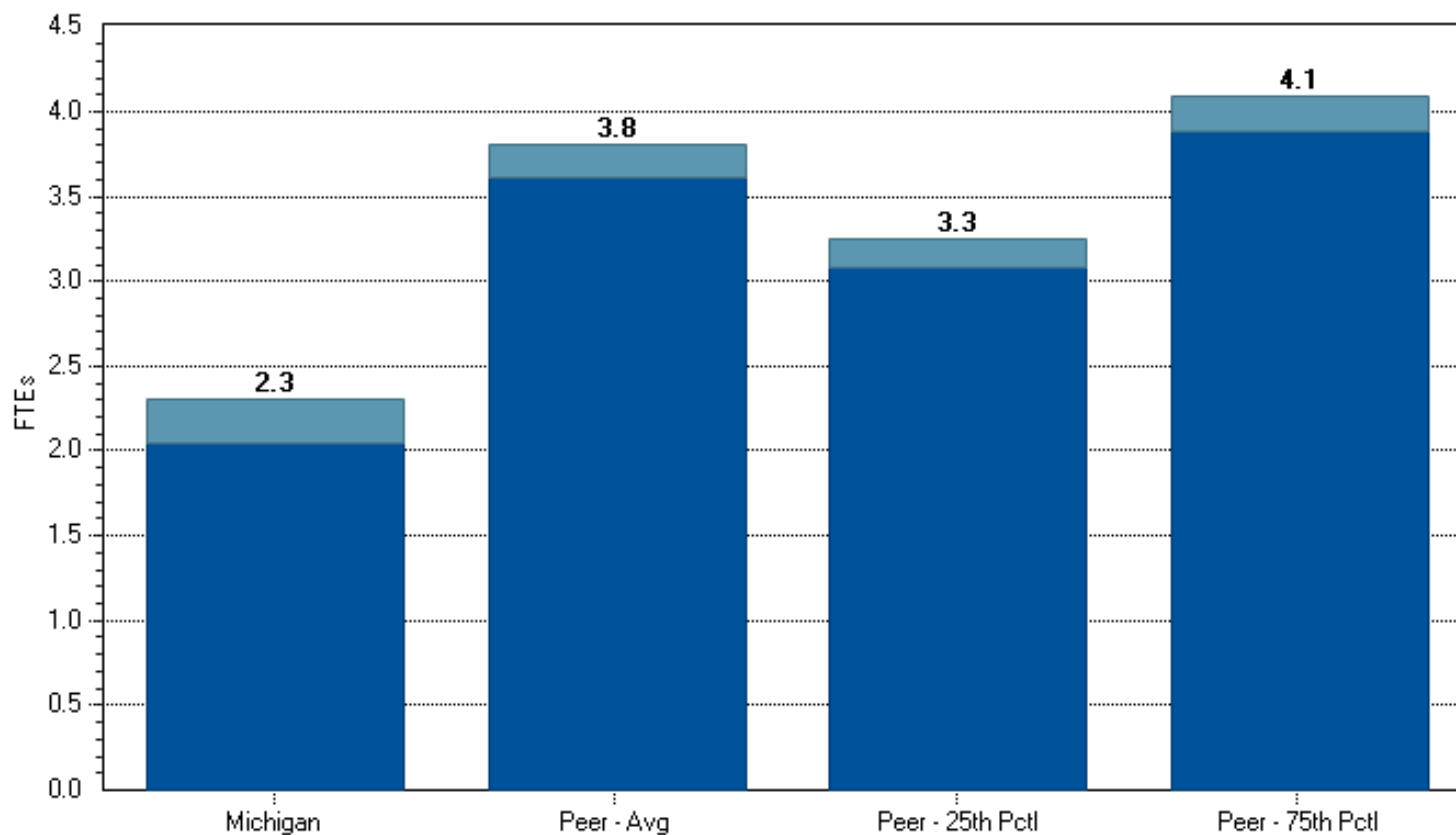
## Voice Network

### Efficiency — Cost per Minute



## Voice Network

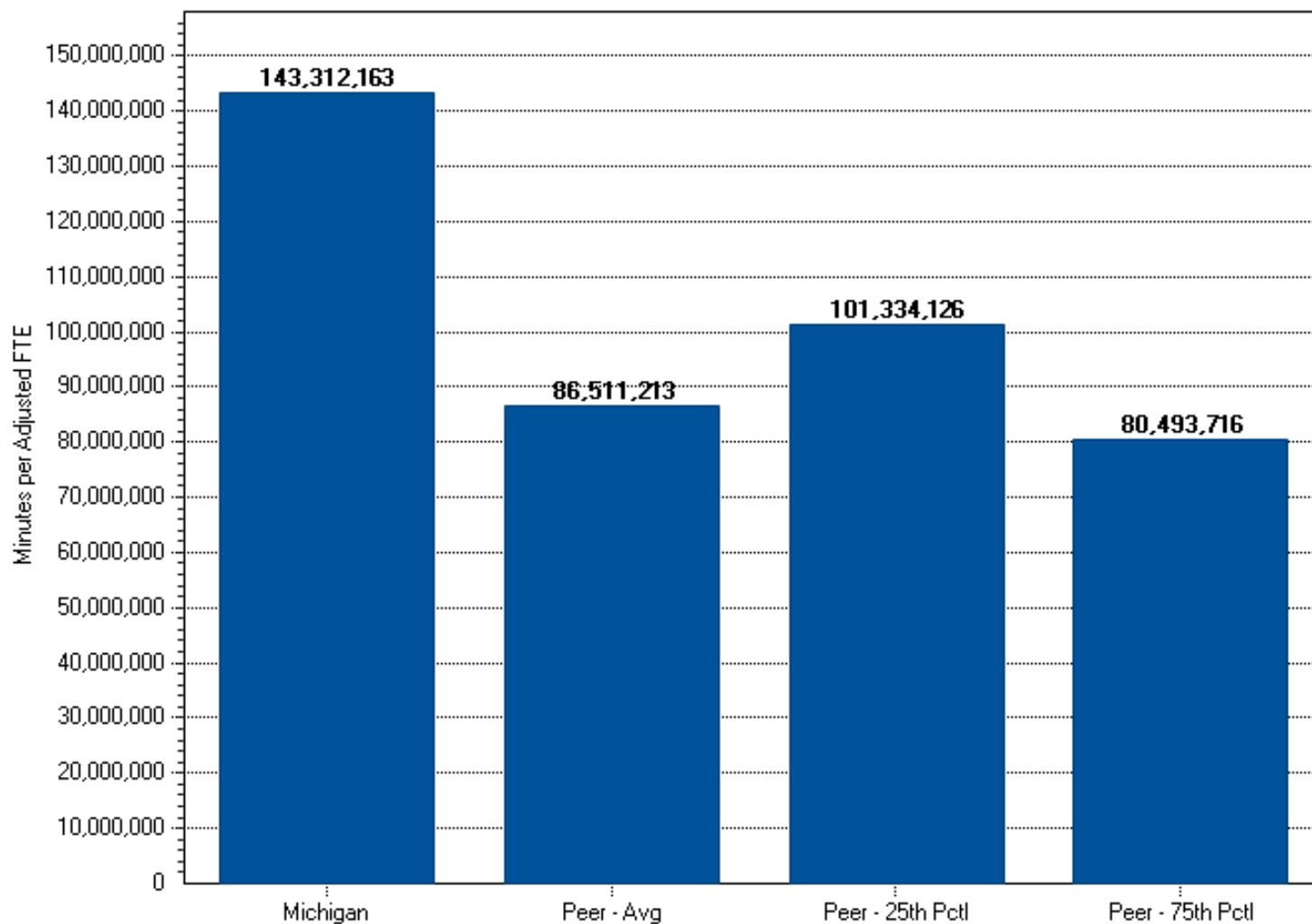
### IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	2.0	3.6	3.1	3.9
Outsourced Equivalent	0.0	0.0	0.0	0.0
Contractor	0.3	0.2	0.2	0.2

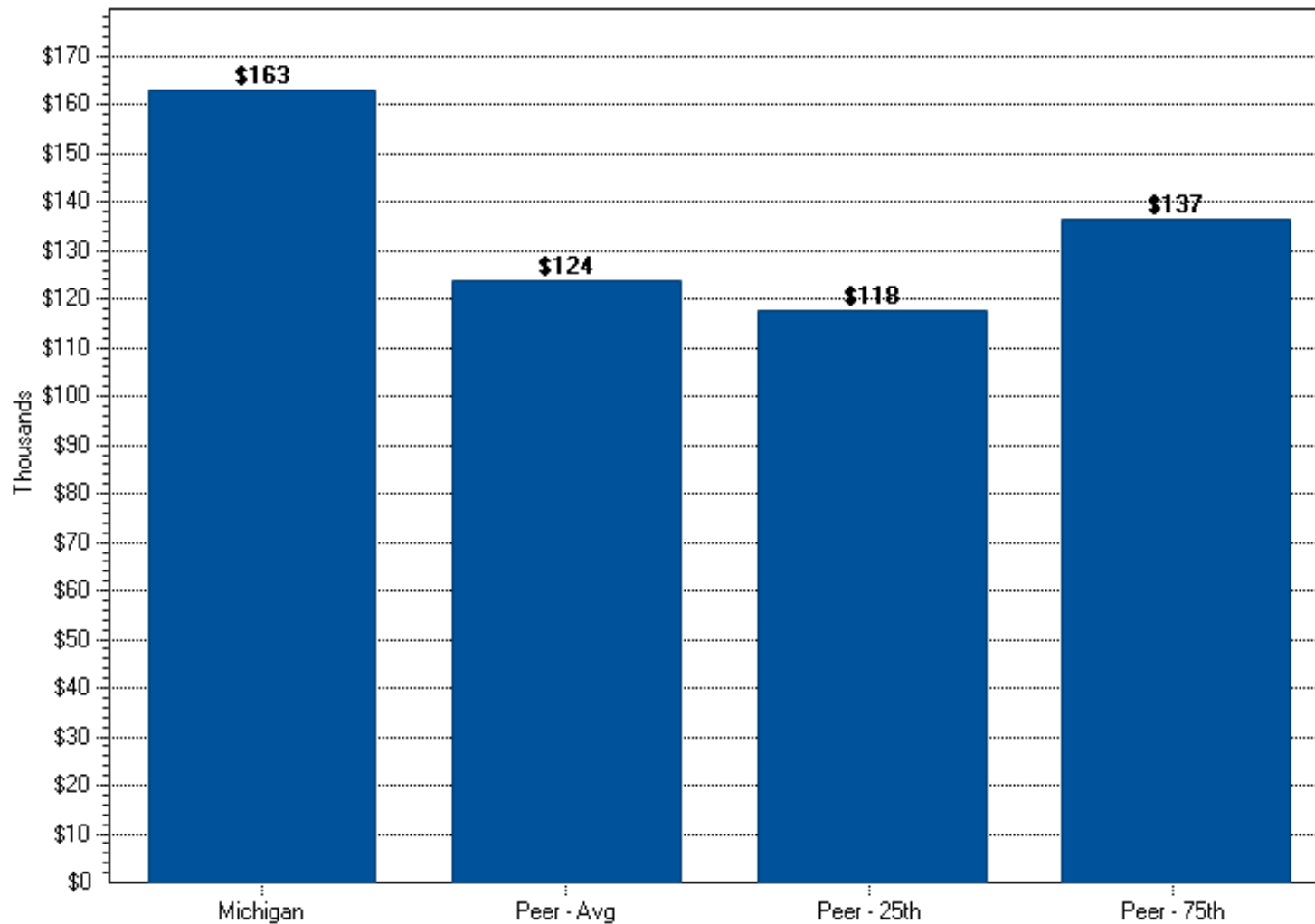
## Voice Network

Productivity — Minutes per Adjusted FTE



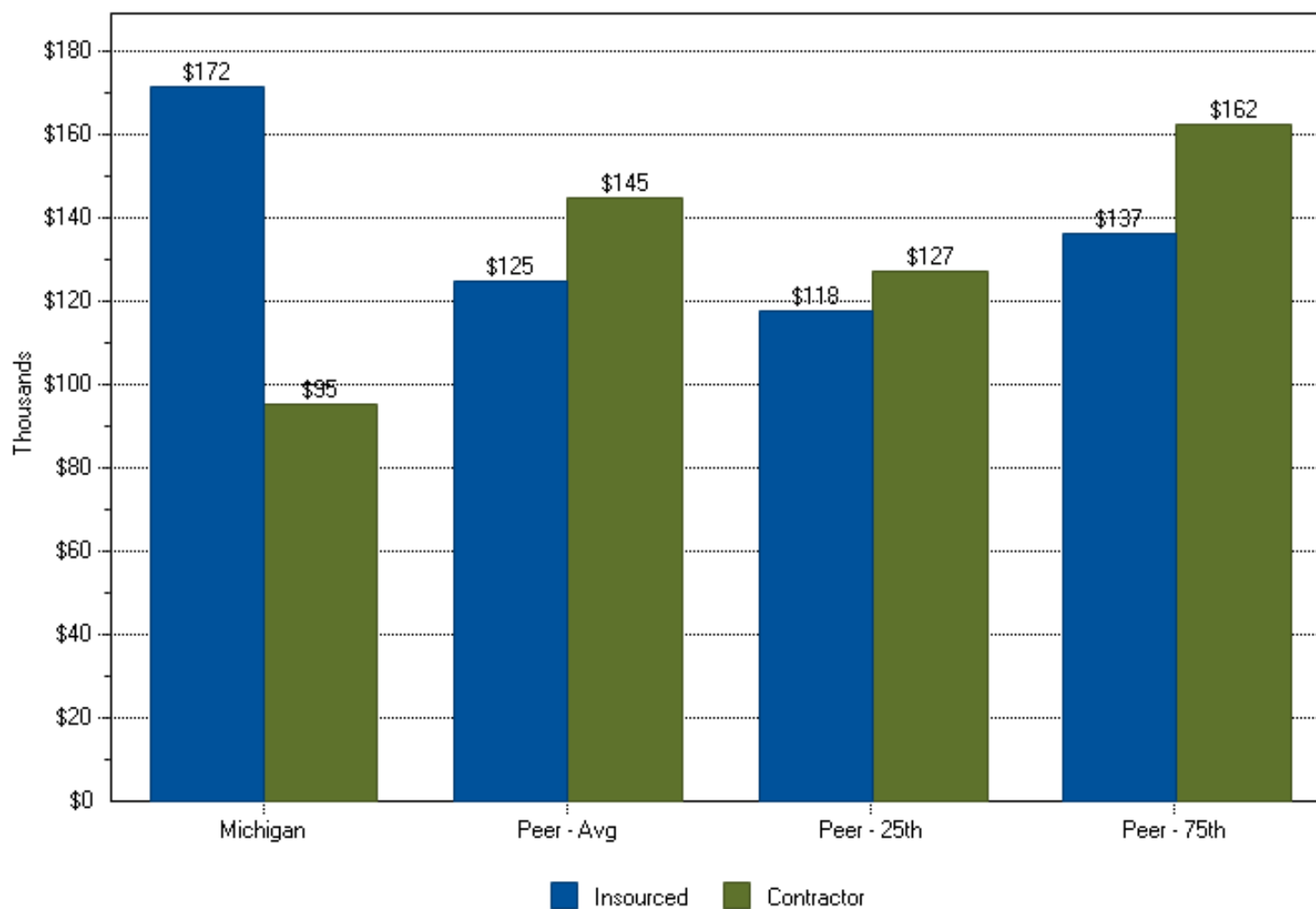
## Voice Network

Cost per FTE — Insourced and Contractor Blended Total



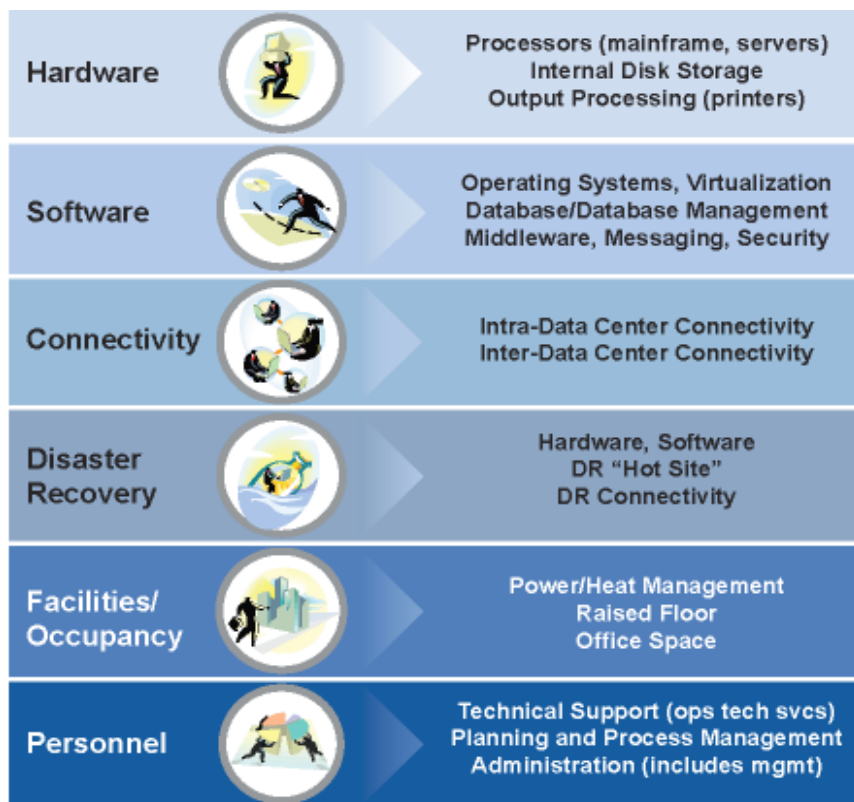
## Voice Network

### Cost per FTE by Source



# Enterprise Computing — Wintel

## Scope



### ■ Scope

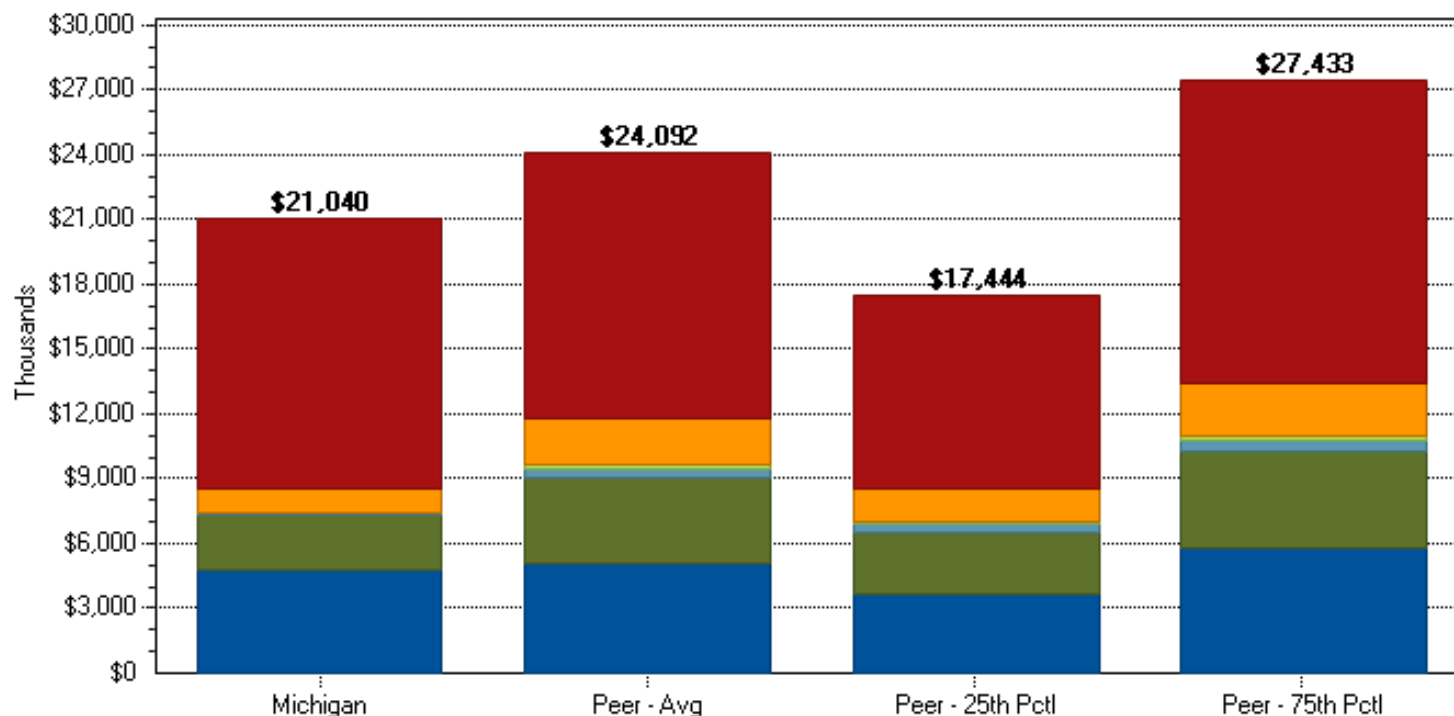
- Total OS Instances — 3,065
  - 2,159 Tech Services, 906 OA
- Total Physical Devices — 2,277
  - 1,371 Tech Services, 906 OA
- FTEs before allocations — 128.3
  - 92.3 Tech Services, 36 OA
- FTEs after allocations — 135.9
  - 96.2 Tech Services, 39.7 OA
- Spending level — \$21M
  - \$13.6M Tech Services, \$7.4M OA

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of instances and physical devices
- 3 Utilities, 1 Financial Services, 1 Insurance, 1 Healthcare, 1 Electronics

# Enterprise Computing — Wintel

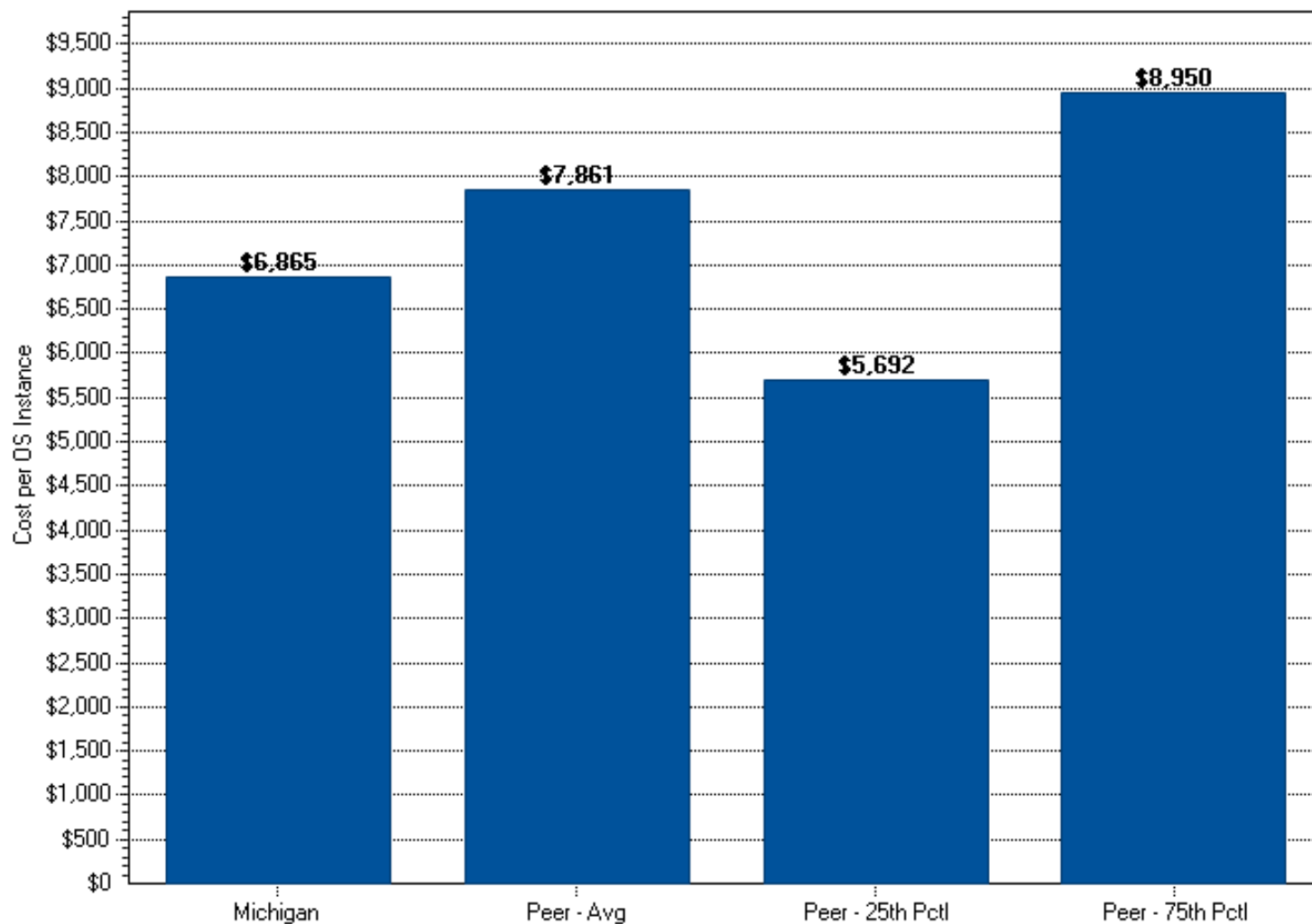
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$4,804	\$5,086	\$3,682	\$5,791
Software	\$2,507	\$3,940	\$2,853	\$4,487
Connectivity	\$90	\$463	\$335	\$527
Disaster Recovery	\$0	\$148	\$107	\$168
Occupancy/Facilities	\$1,166	\$2,126	\$1,539	\$2,421
Personnel	\$12,473	\$12,330	\$8,928	\$14,039

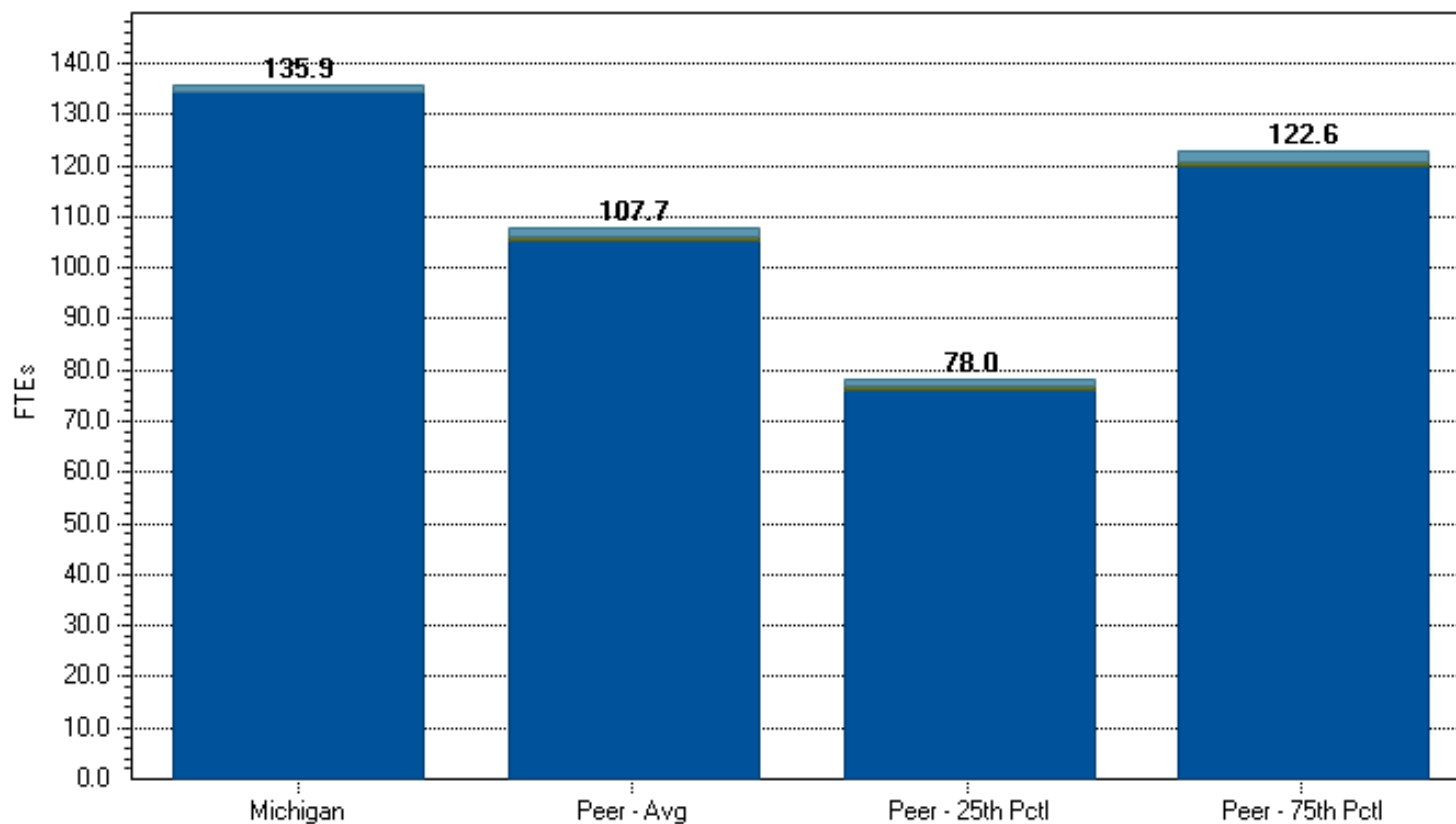
## Enterprise Computing — Wintel

### Efficiency — Cost per Total OS Instance



# Enterprise Computing — Wintel

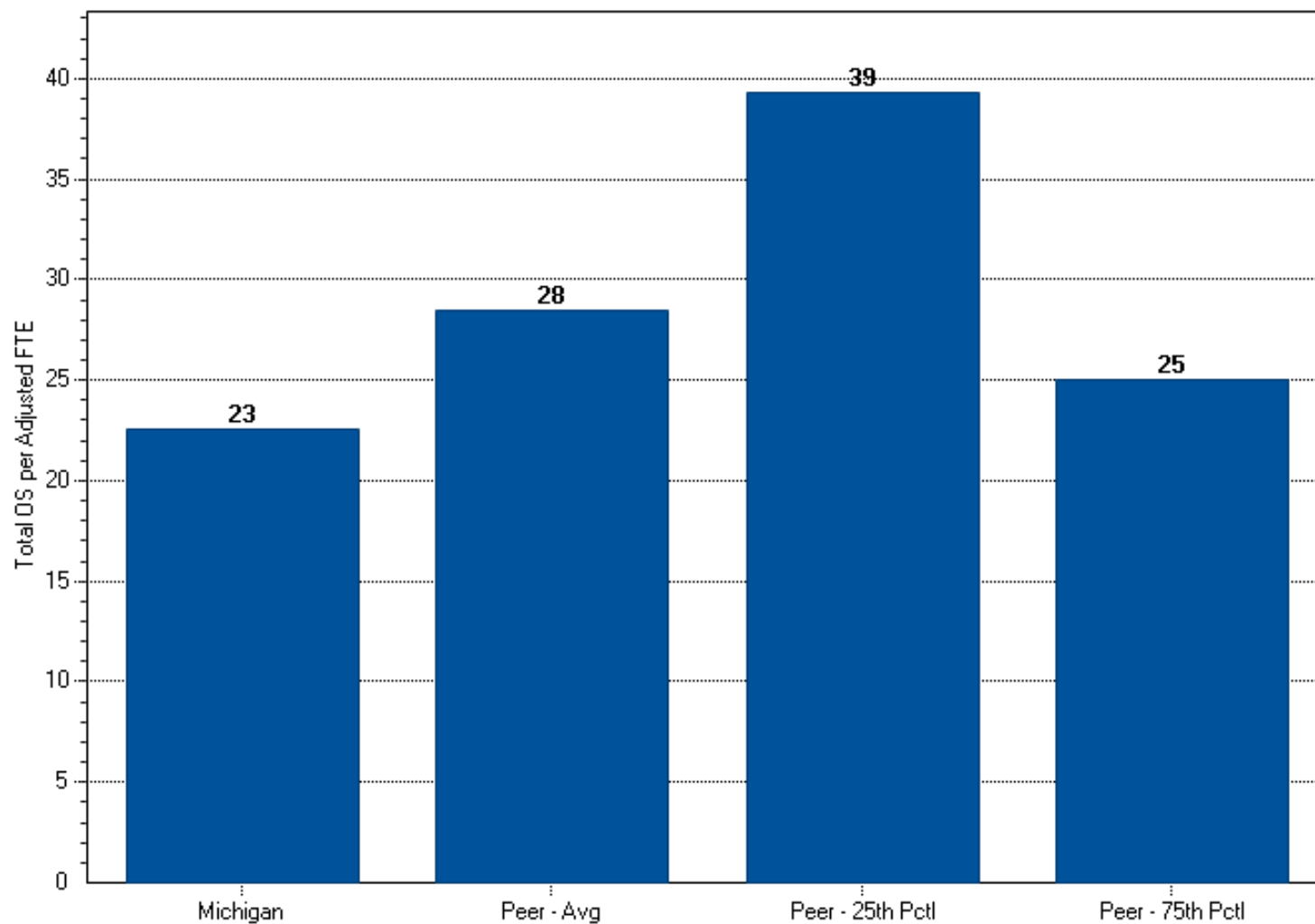
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	134.4	105.1	76.1	119.7
Outsource Equivalent	0.0	1.0	0.7	1.1
Contractor	1.5	1.6	1.2	1.8

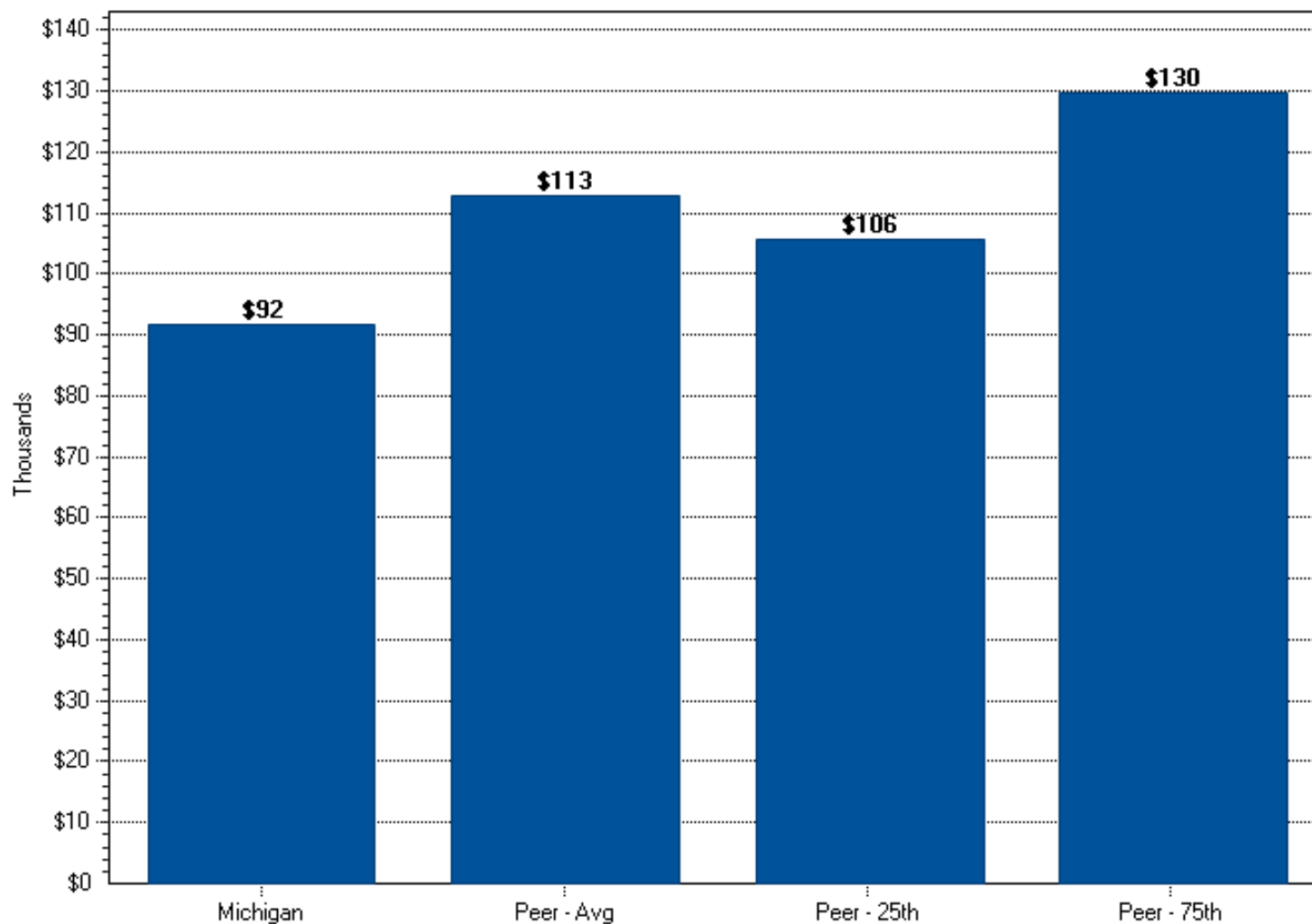
## Enterprise Computing — Wintel

### Productivity — Total OS Instances per Adjusted FTE



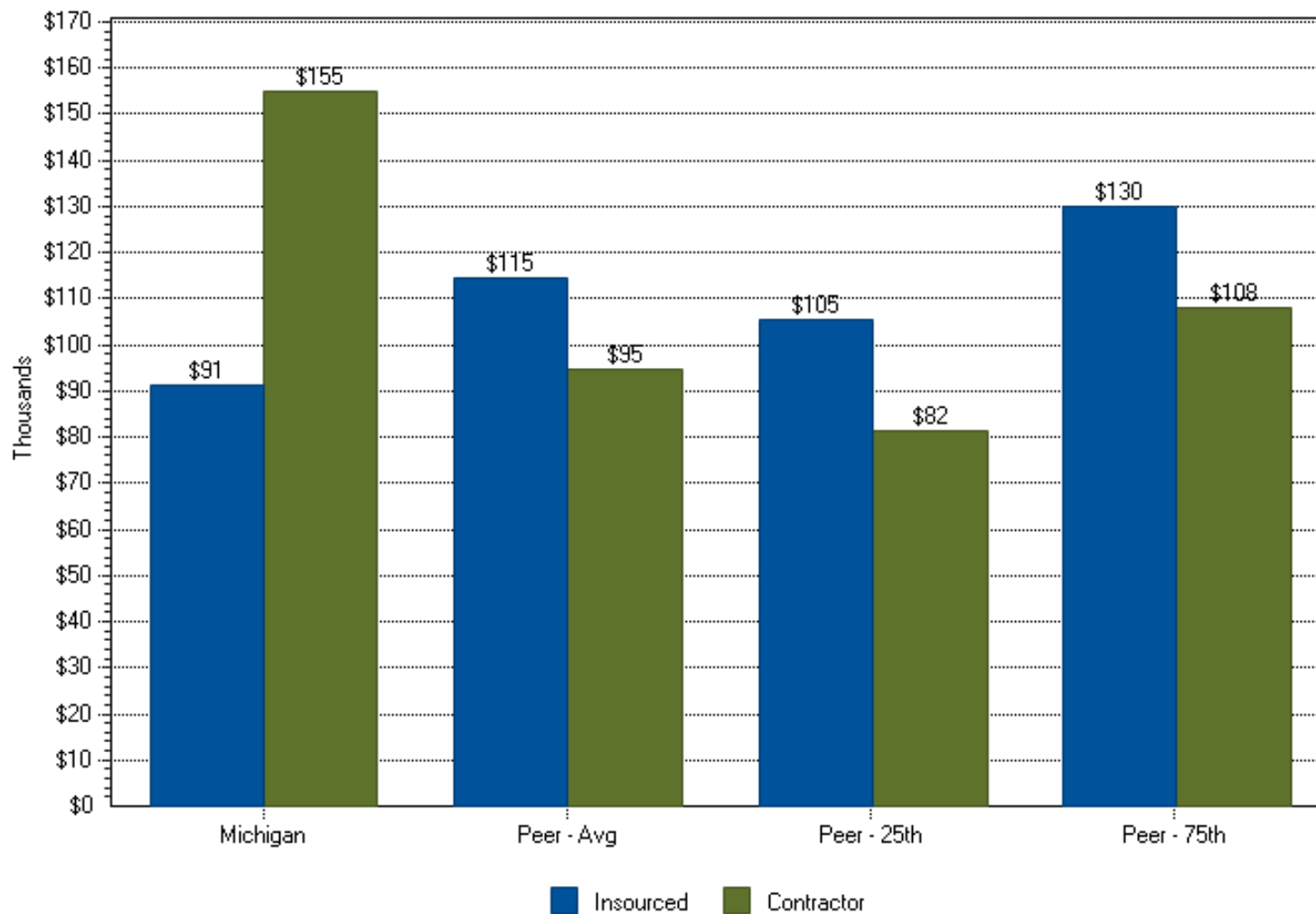
## Enterprise Computing — Wintel

Cost per FTE — Insourced and Contractor Blended Total



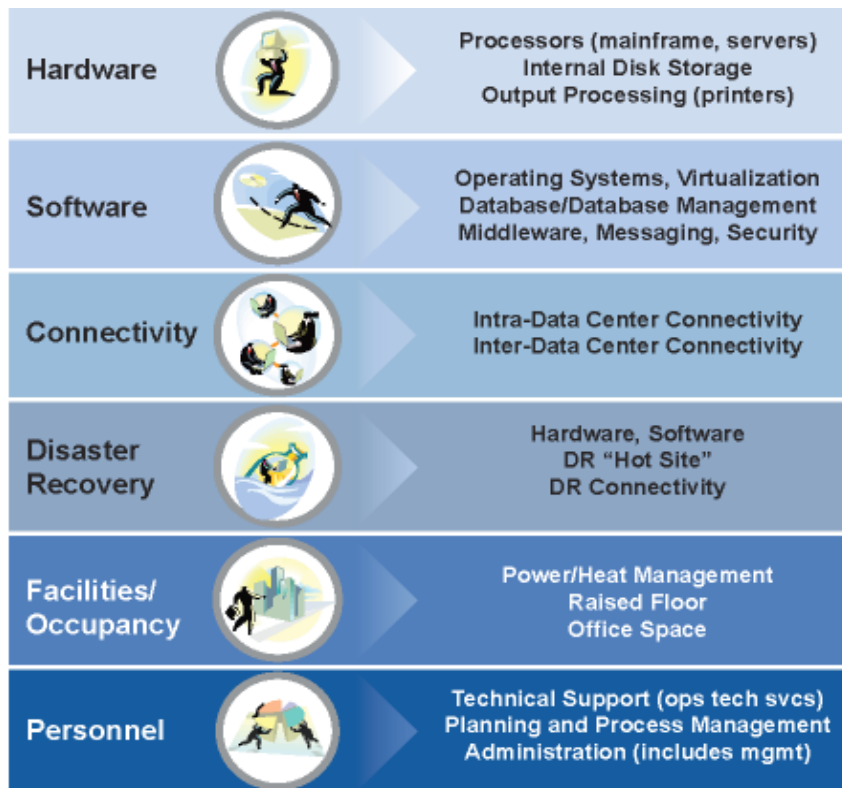
# Enterprise Computing — Wintel

## Cost per FTE by Source



# Enterprise Computing — Unix

## Scope



### ■ Scope

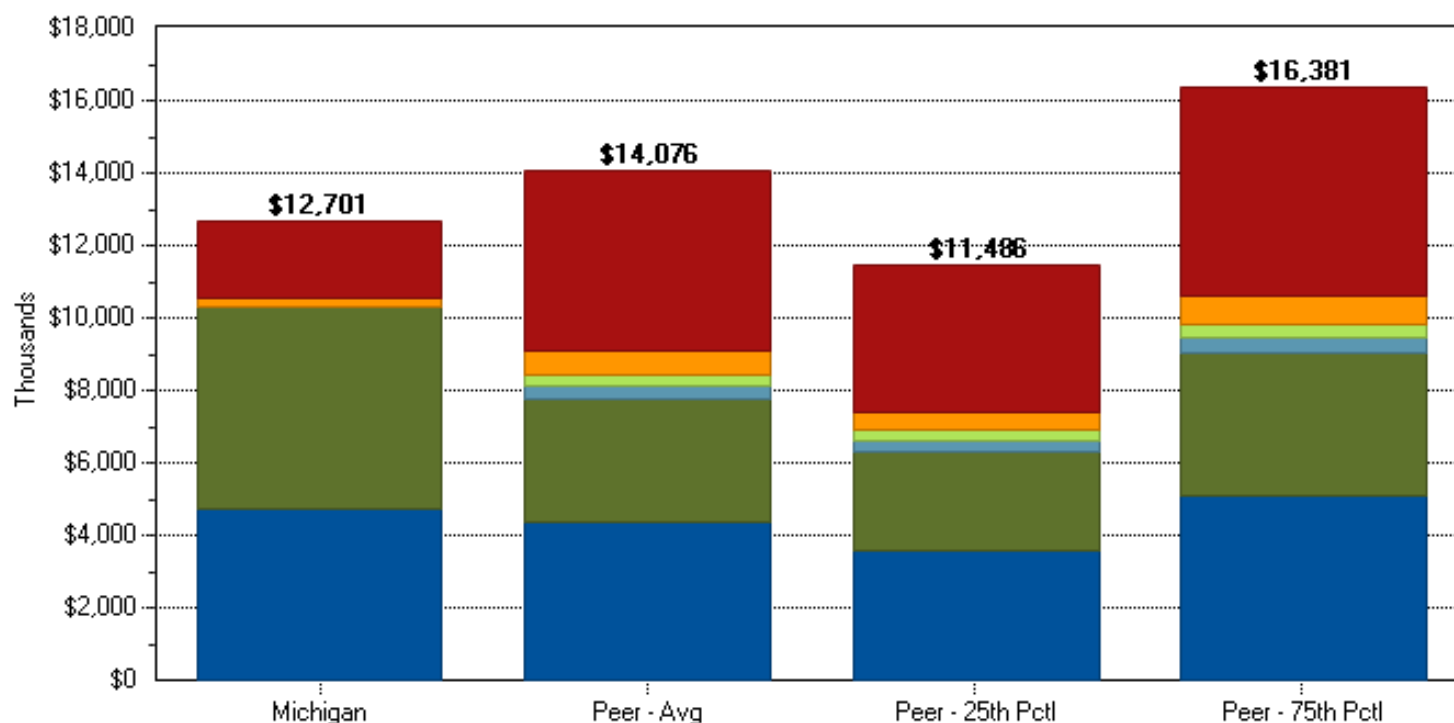
- Total OS Instances — 798
- Total Physical Devices — 659
- FTEs before allocations — 24.1
- FTEs after allocations — 25
- Spending level — \$12.7M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of instances and physical devices
- 3 Utilities, 2 Healthcare, 2 Insurance, 1 Financial Services, 1 Public Sector

# Enterprise Computing — Unix

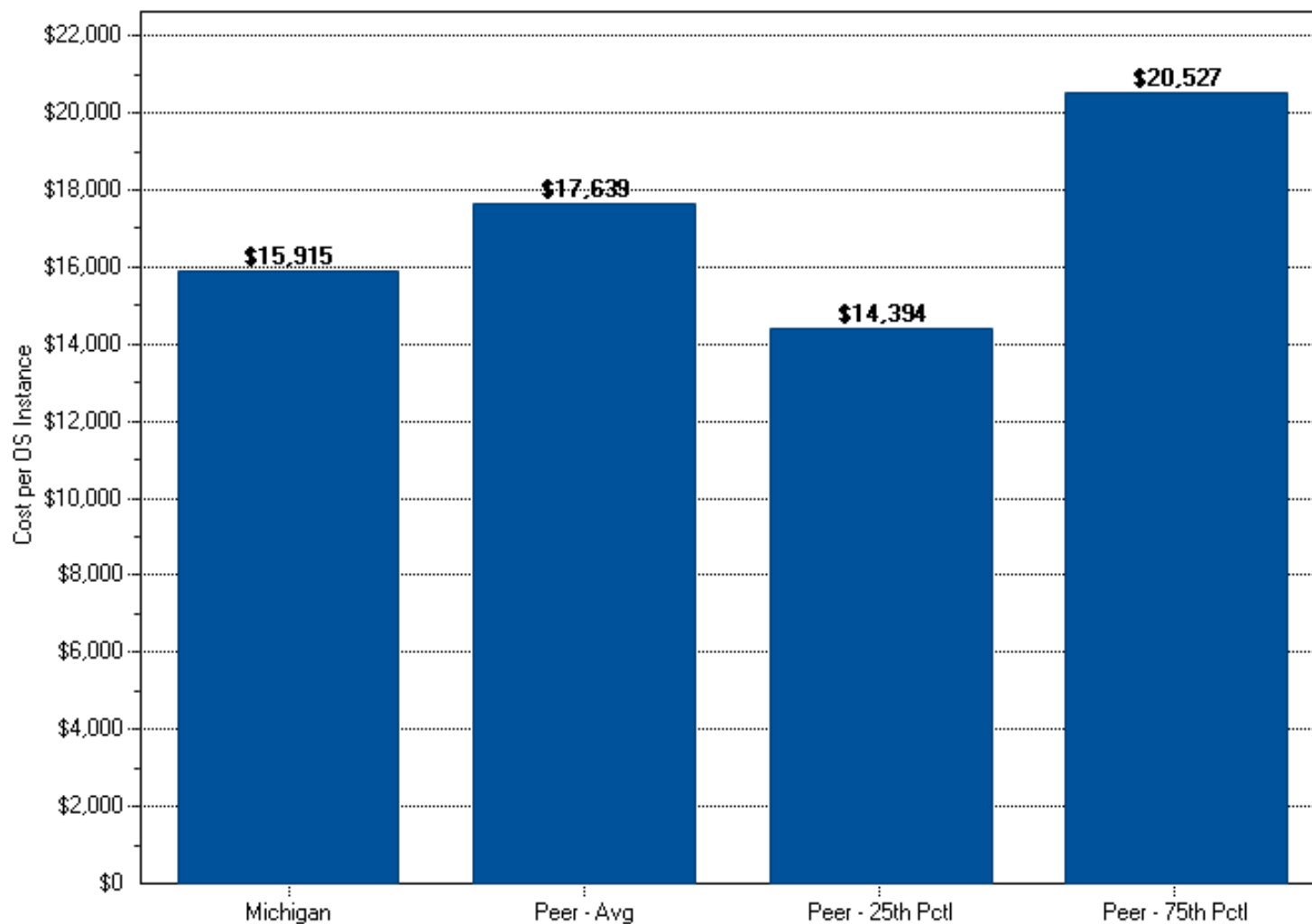
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$4,710	\$4,354	\$3,552	\$5,066
Software	\$5,611	\$3,415	\$2,787	\$3,975
Connectivity	\$22	\$369	\$301	\$430
Disaster Recovery	\$0	\$305	\$249	\$355
Occupancy/Facilities	\$217	\$664	\$542	\$773
Personnel	\$2,141	\$4,969	\$4,055	\$5,783

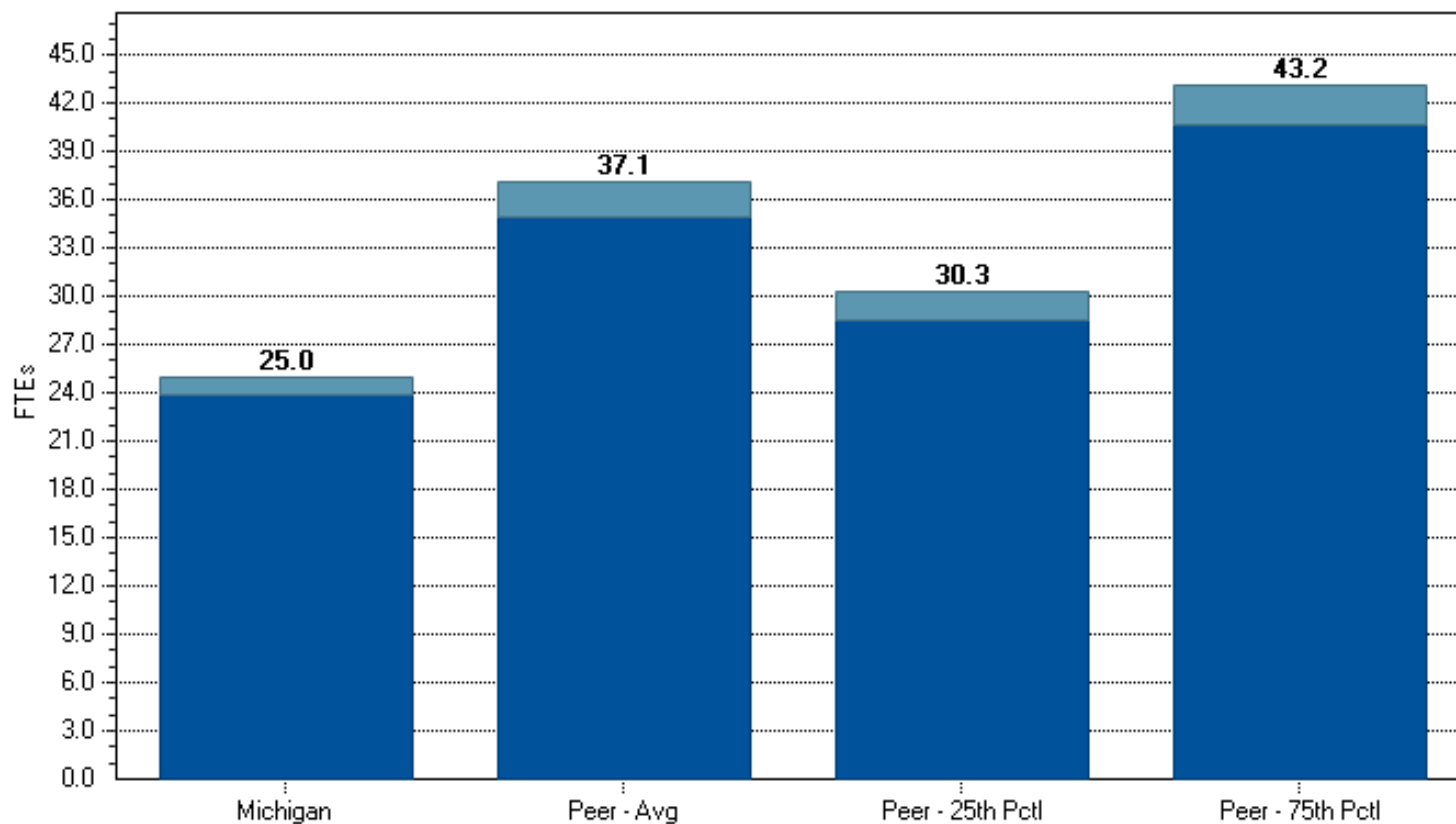
## Enterprise Computing — Unix

### Efficiency — Cost per Total OS Instance



# Enterprise Computing — Unix

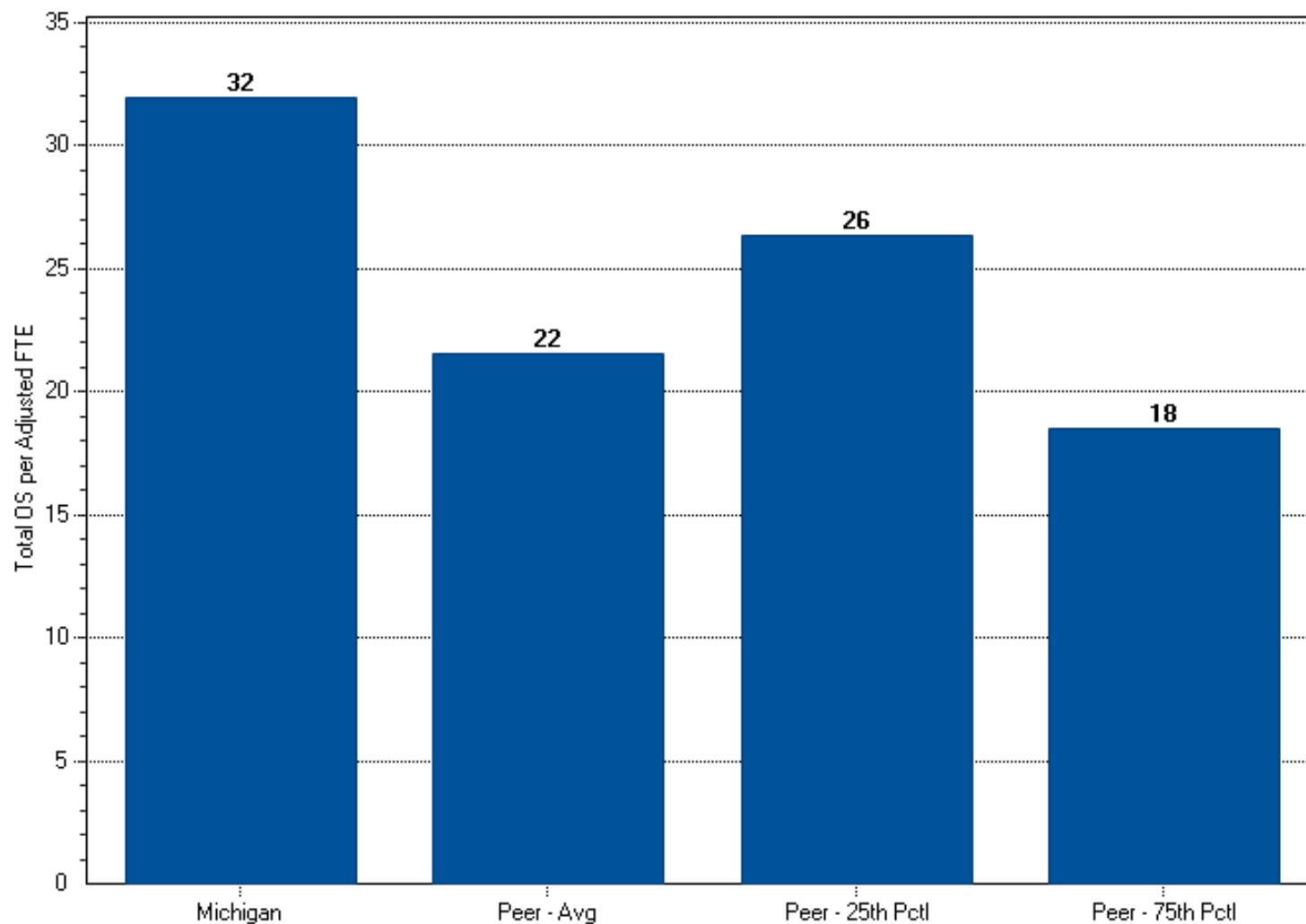
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	23.9	35.0	28.5	40.7
Outsource Equivalent	0.0	0.0	0.0	0.0
Contractor	1.1	2.1	1.7	2.5

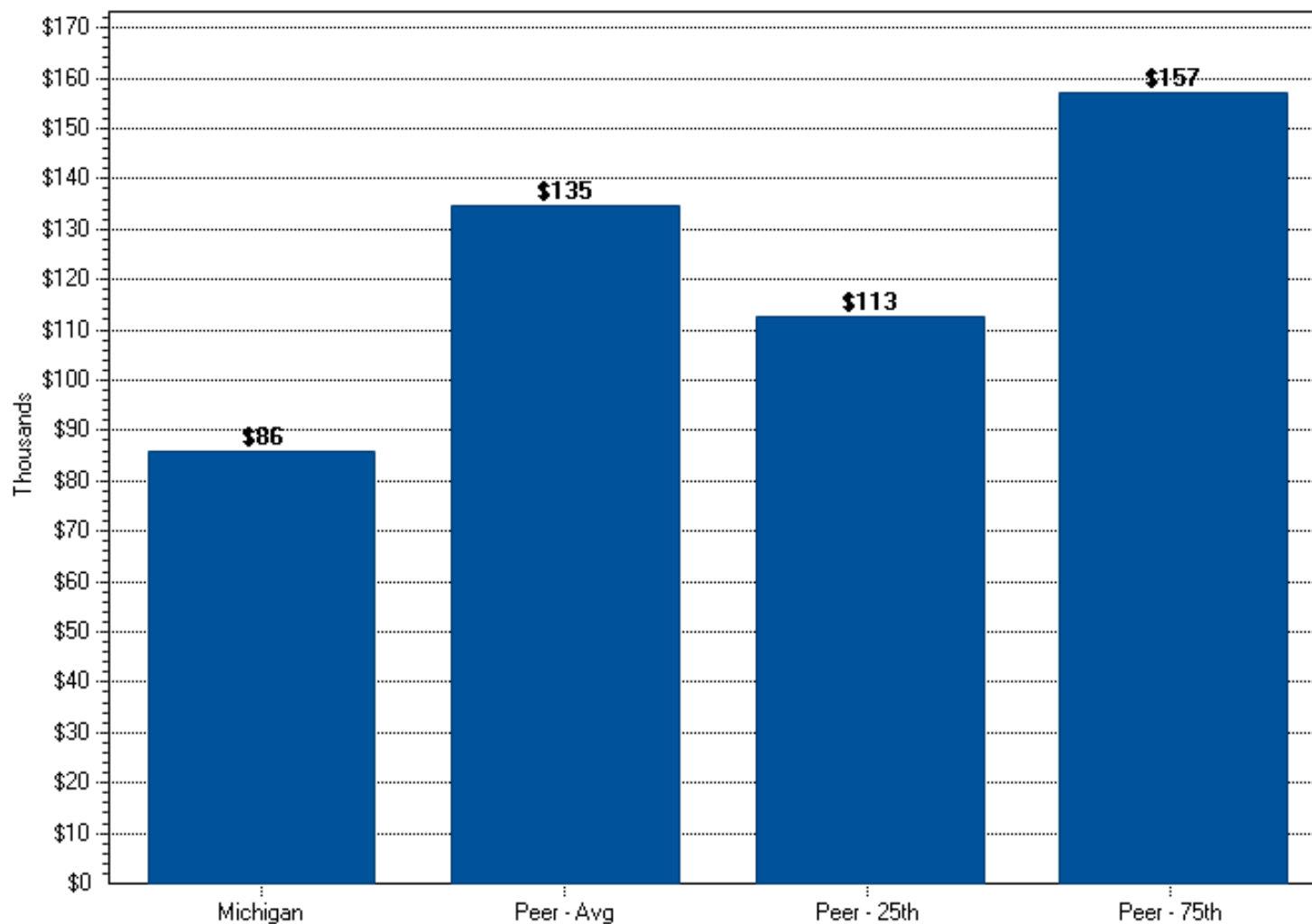
## Enterprise Computing — Unix

Productivity — Total OS Instances per Adjusted FTE



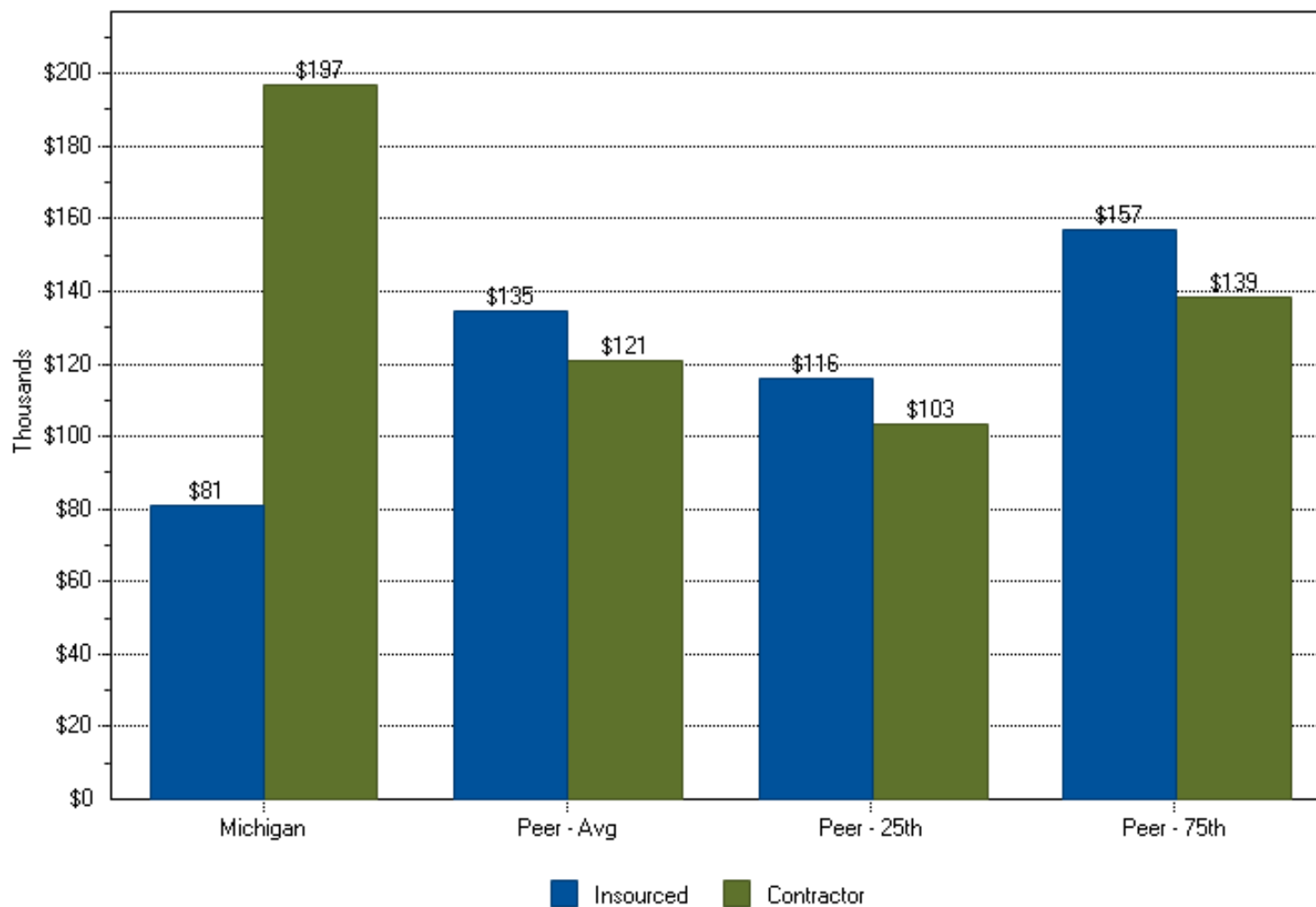
## Enterprise Computing — Unix

Cost per FTE — Insourced and Contractor Blended Total



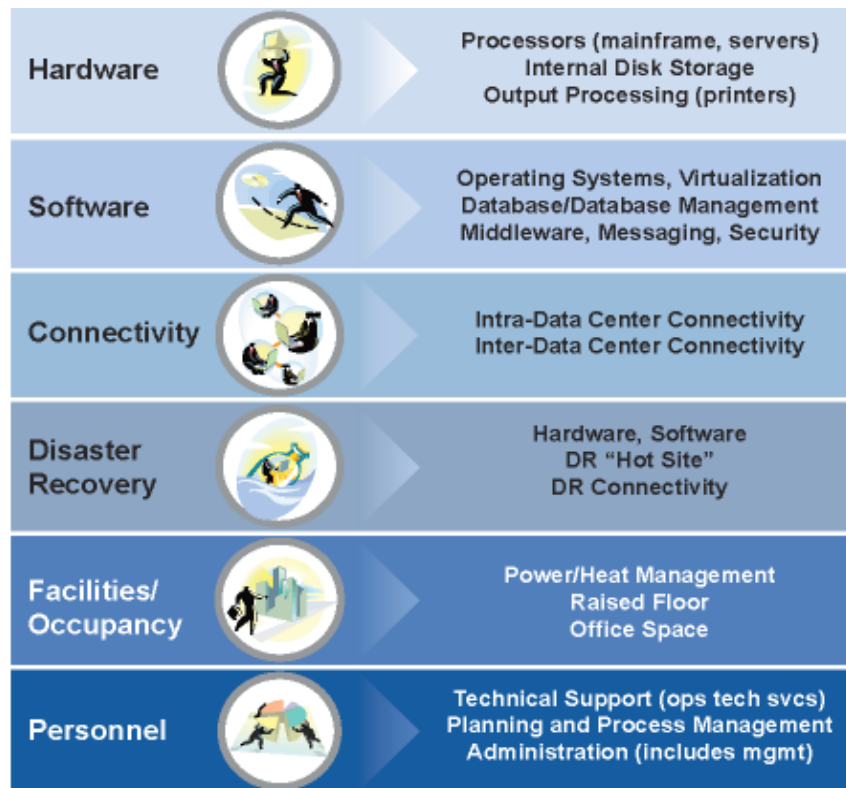
## Enterprise Computing — Unix

### Cost per FTE by Source



# Enterprise Computing — Mainframe

## Scope



### ■ Scope

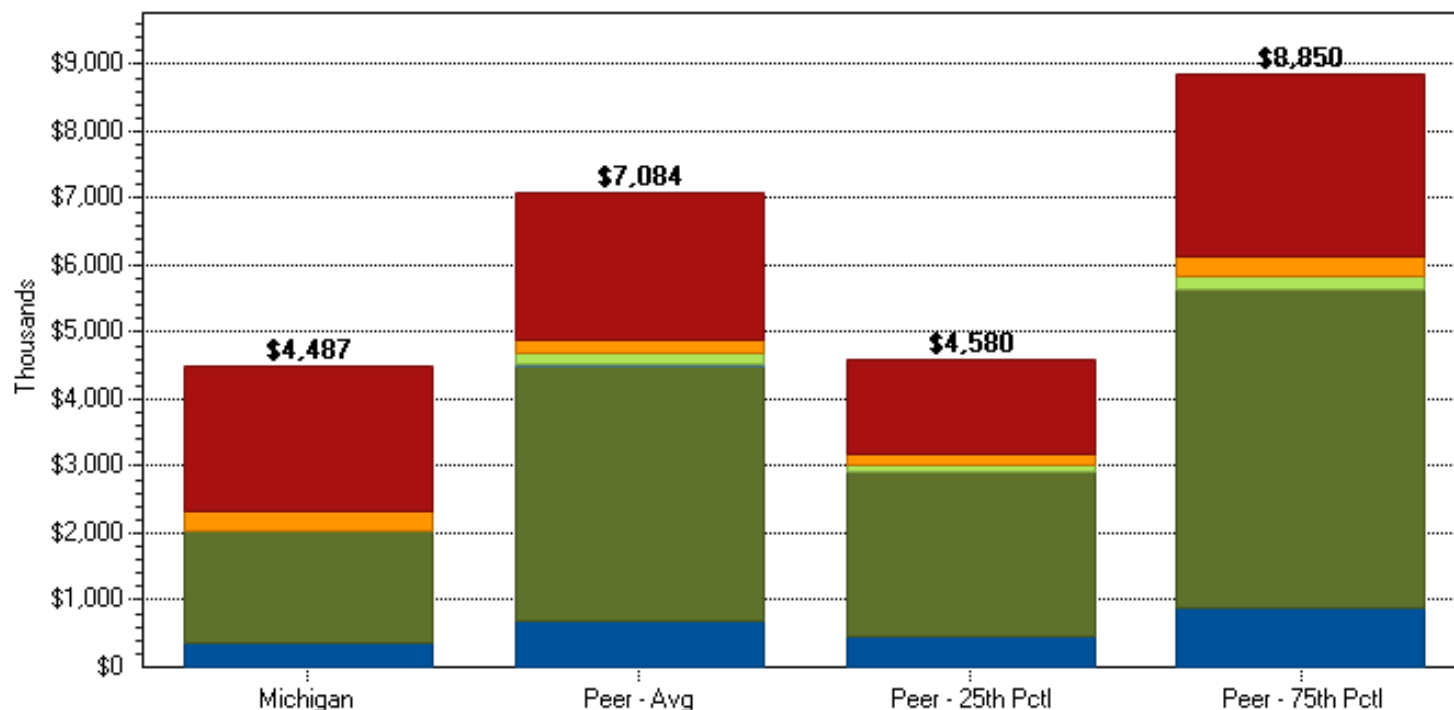
- Total Unisys MIPS — 285
- Conversion to IBM MIPS — 1,425
- FTEs before allocations — 18.7
- FTEs after allocations — 20.2
- Spending level — \$4.5M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar number of MIPS
- 5 Utilities, 1 Public Sector, 1 Retail, 1 Consumer Goods

# Enterprise Computing — Mainframe

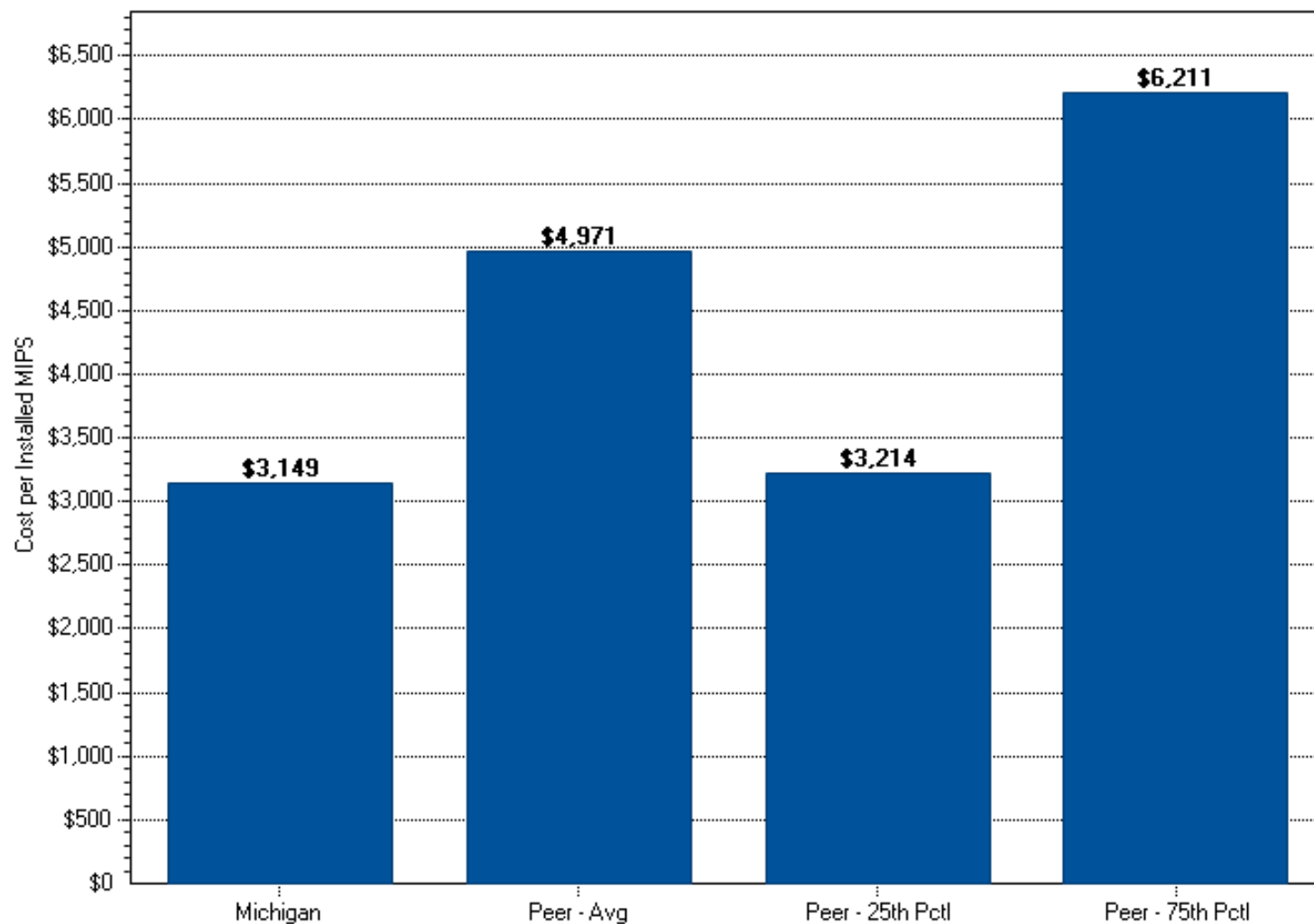
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$346	\$698	\$451	\$872
Software	\$1,698	\$3,805	\$2,460	\$4,754
Connectivity	\$0	\$17	\$11	\$21
Disaster Recovery	\$0	\$153	\$99	\$191
Occupancy/Facilities	\$291	\$221	\$143	\$276
Personnel	\$2,152	\$2,190	\$1,416	\$2,736

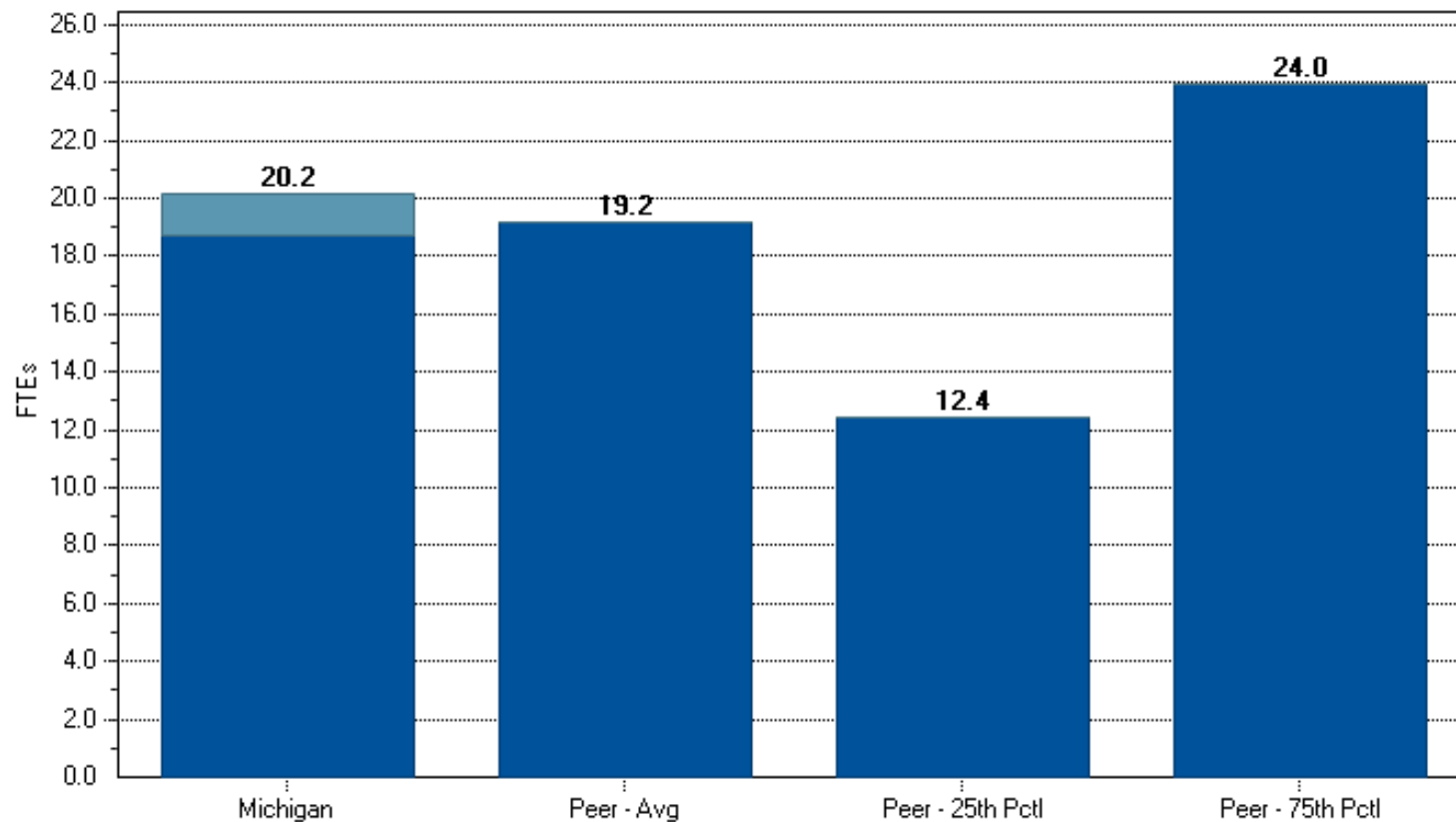
# Enterprise Computing — Mainframe

## Efficiency — Cost per Total MIPS



# Enterprise Computing — Mainframe

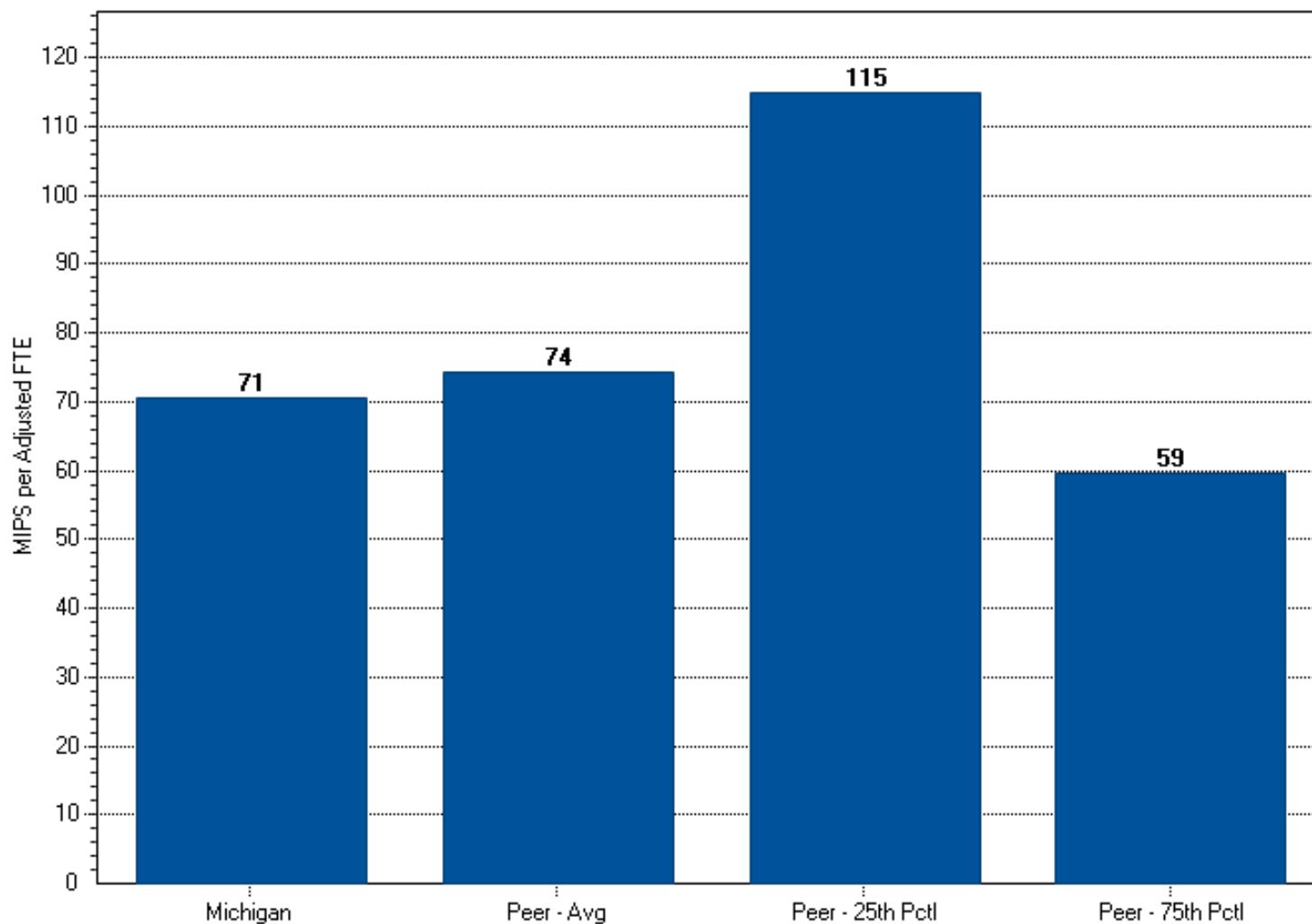
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	18.7	19.2	12.4	24.0
Outsource Equivalent	0.0	0.0	0.0	0.0
Contractor	1.5	0.0	0.0	0.0

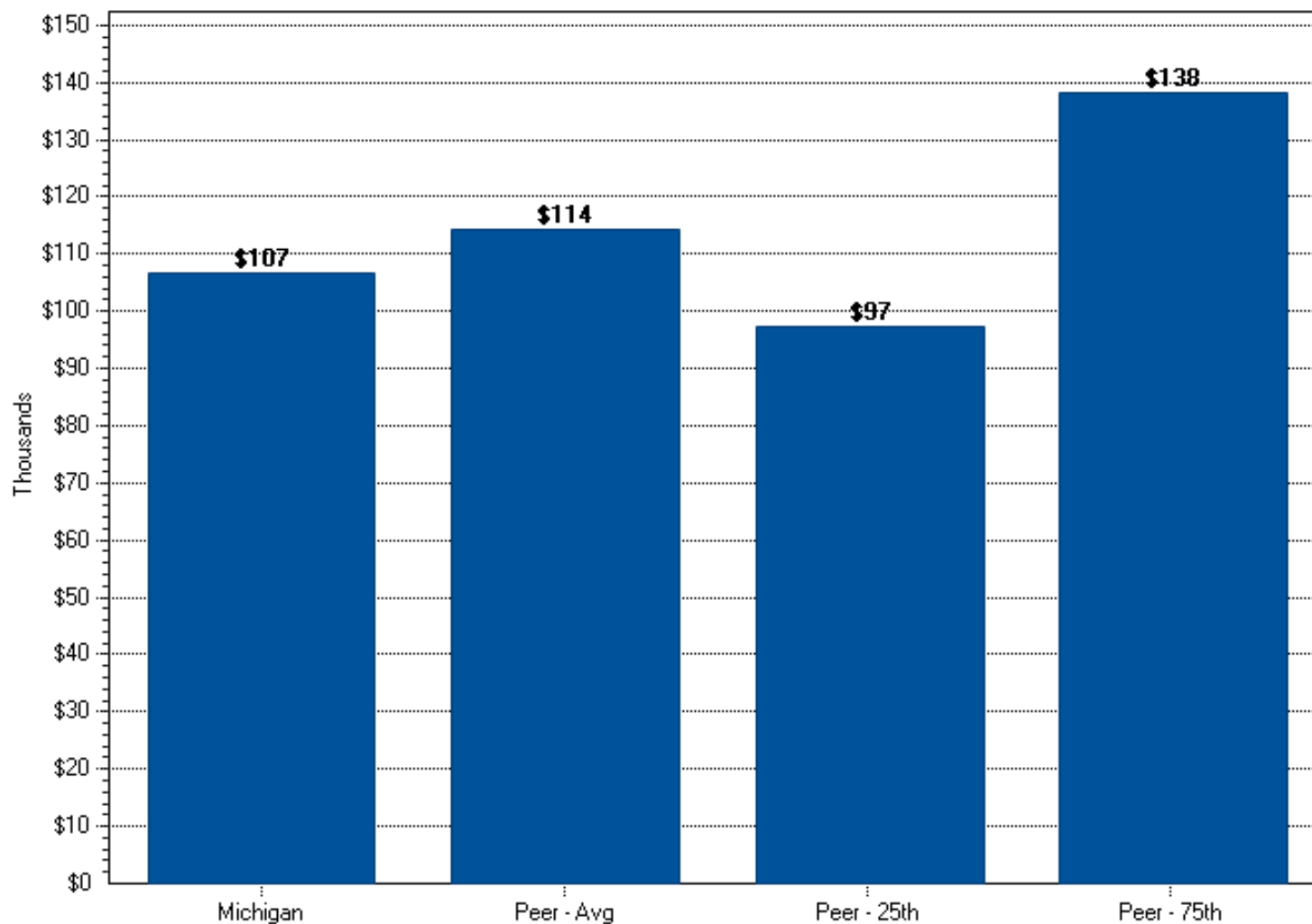
# Enterprise Computing — Mainframe

## Productivity — Total MIPS per Adjusted FTE



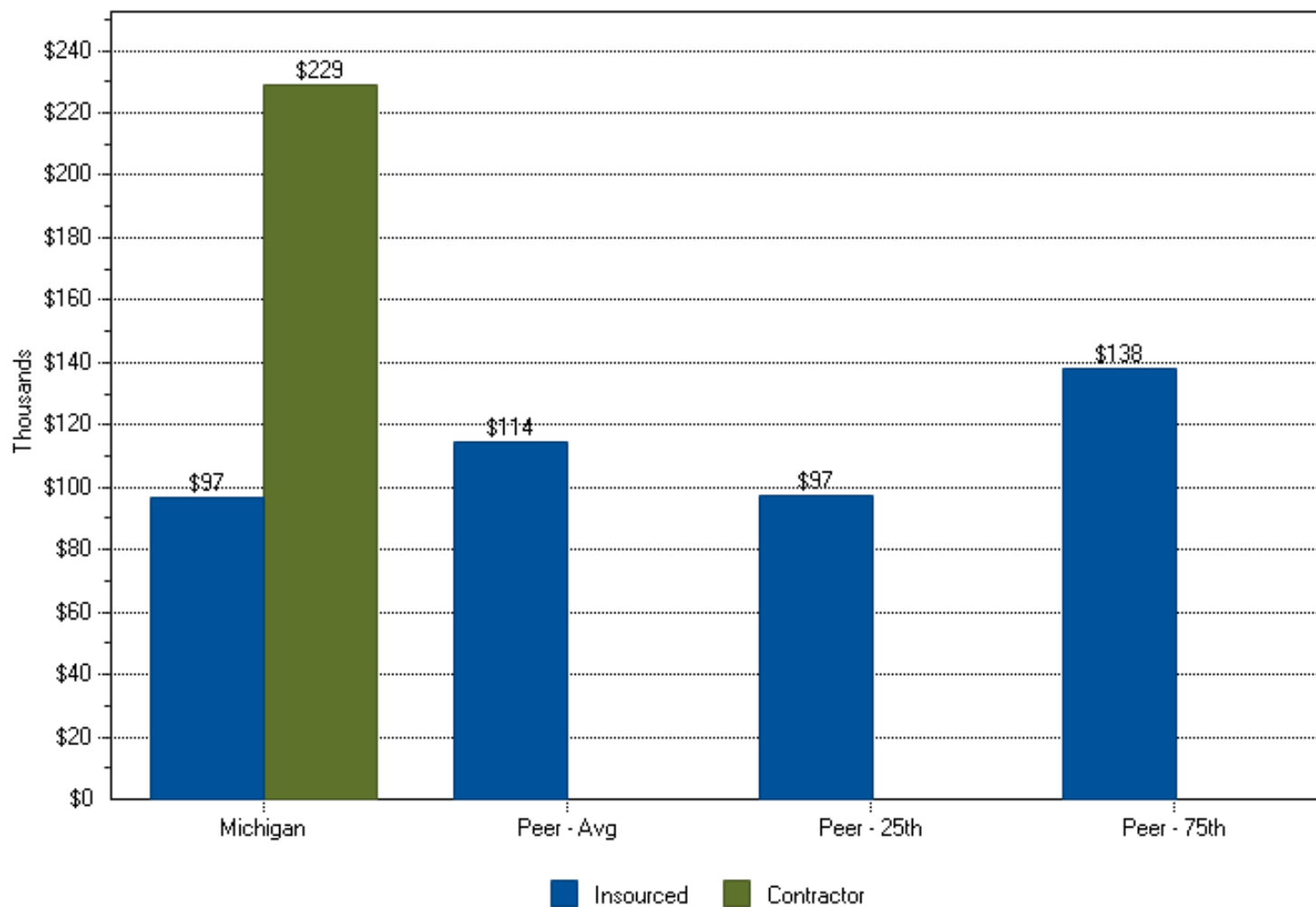
## Enterprise Computing — Mainframe

Cost per FTE — Insourced and Contractor Blended Total



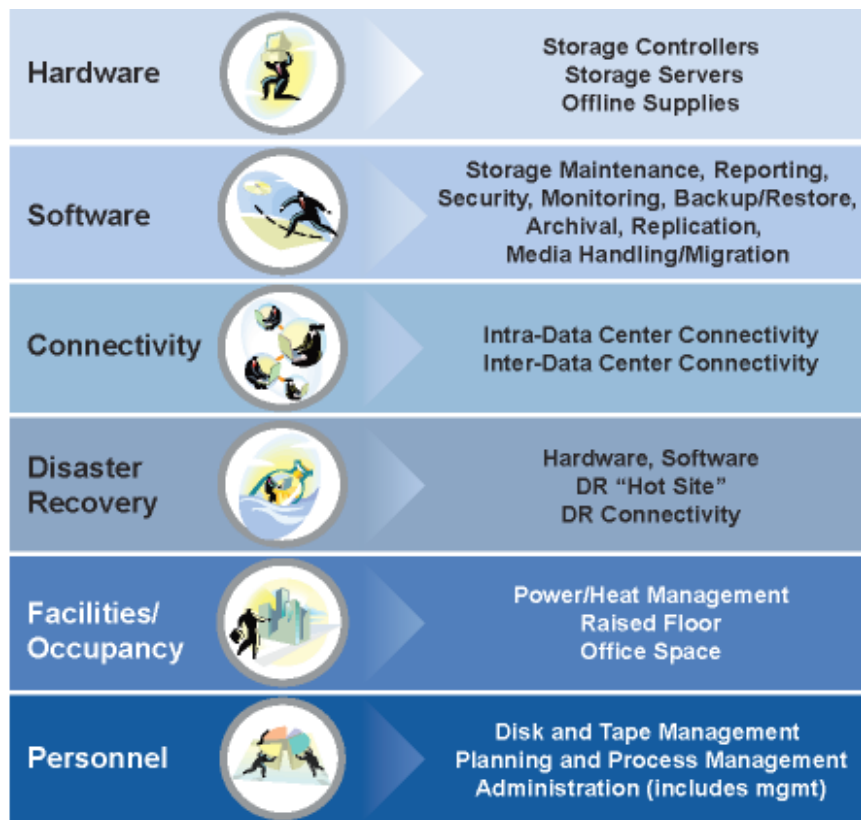
# Enterprise Computing — Mainframe

## Cost per FTE by Source



# Enterprise Storage

## Scope and Peer Profile



### ■ Scope

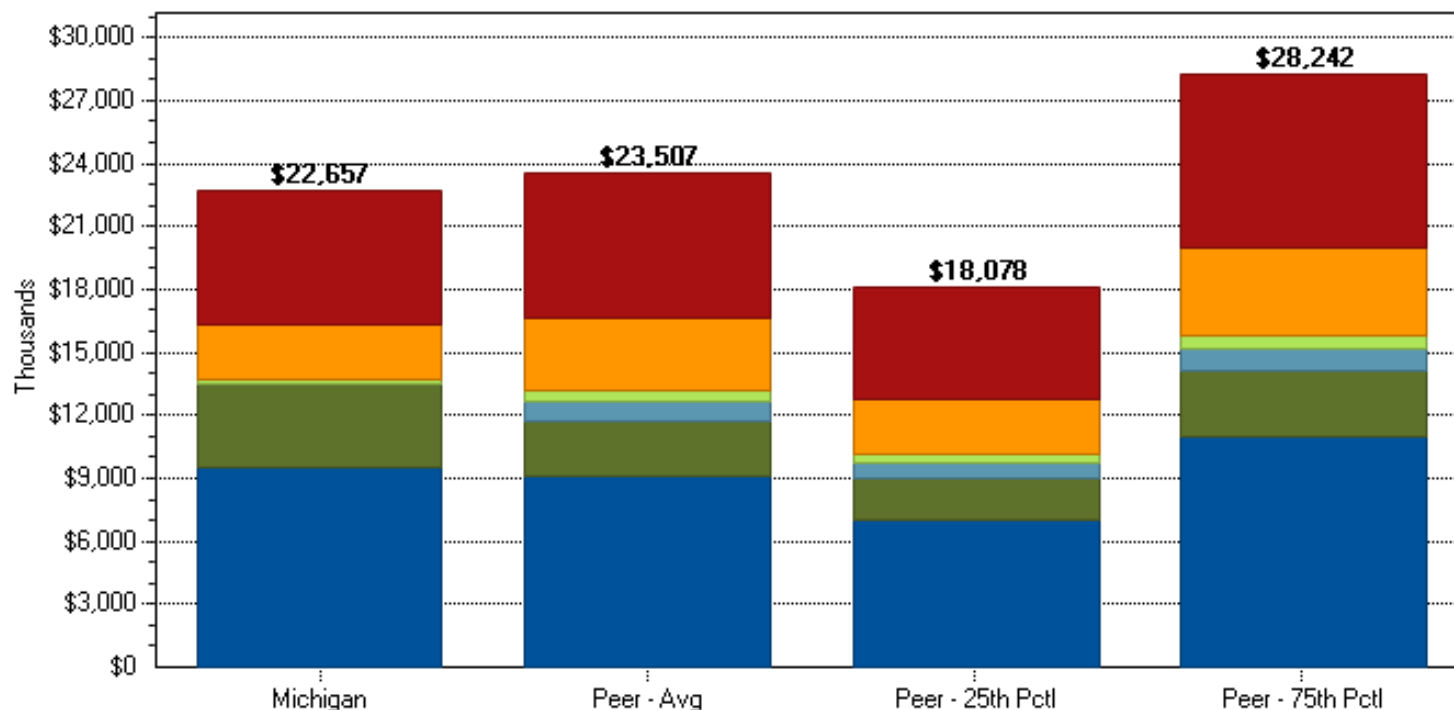
- Total Installed Storage (SAN, NAS, DAS, VTL and other) — 5,414 TB
- FTEs before allocations — 35.68
- FTEs after allocations — 56.2
- Spending level — \$22.7M

### ■ Peer Profile

- Workload peer group consists of organizations with a similar volume of storage capacity
- 3 Utilities, 2 Financial Services, 1 Healthcare, 1 Retail, 1 Consumer Goods

# Enterprise Storage

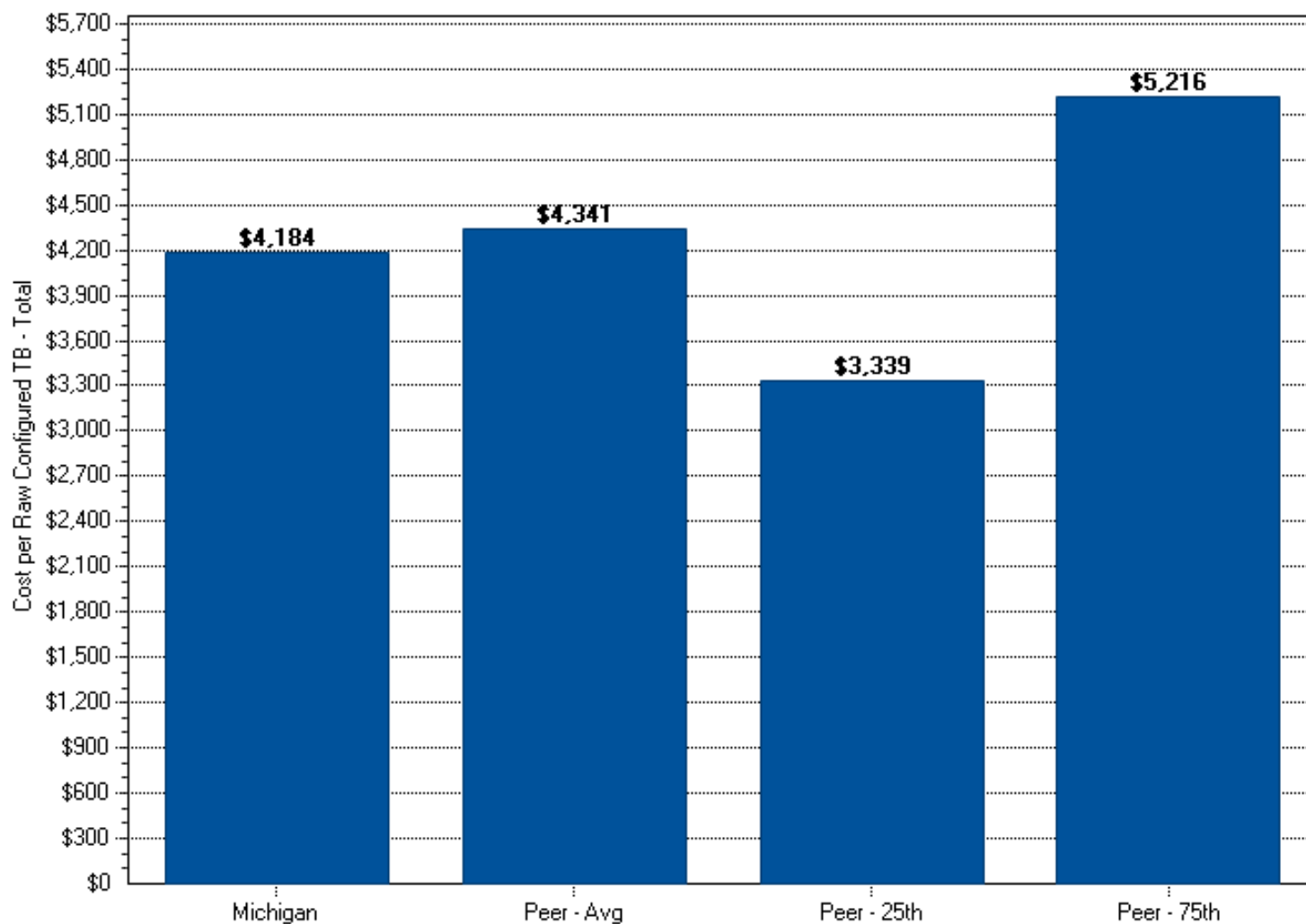
## IT Spending by Cost Category



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Hardware	\$9,556	\$9,110	\$7,006	\$10,945
Software	\$3,972	\$2,613	\$2,010	\$3,139
Disaster Recovery	\$0	\$943	\$725	\$1,133
Connectivity	\$152	\$510	\$392	\$613
Occupancy	\$2,618	\$3,479	\$2,675	\$4,179
Personnel	\$6,360	\$6,852	\$5,270	\$8,233

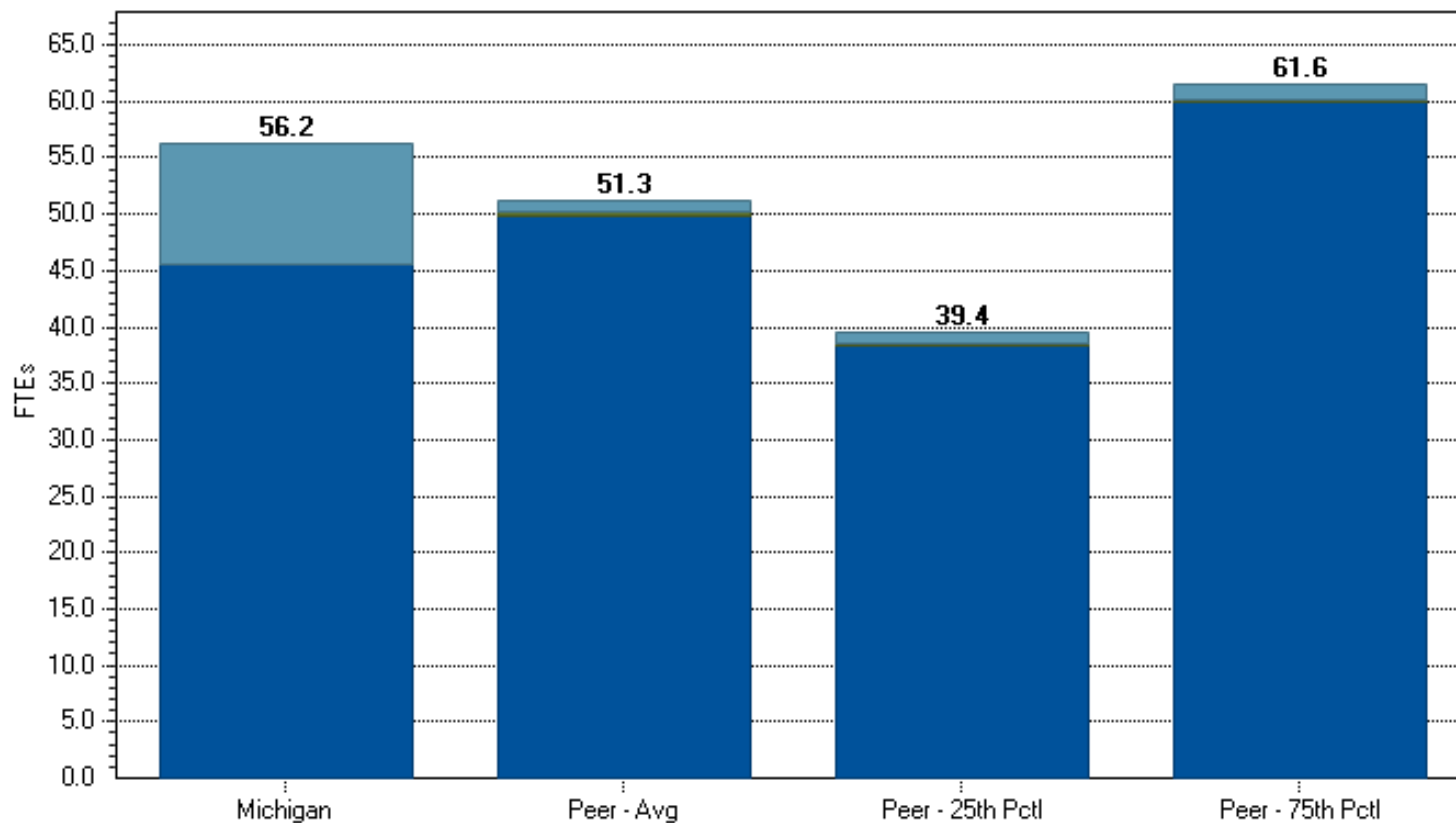
# Enterprise Storage

## Efficiency — Cost per Raw Configured TB



# Enterprise Storage

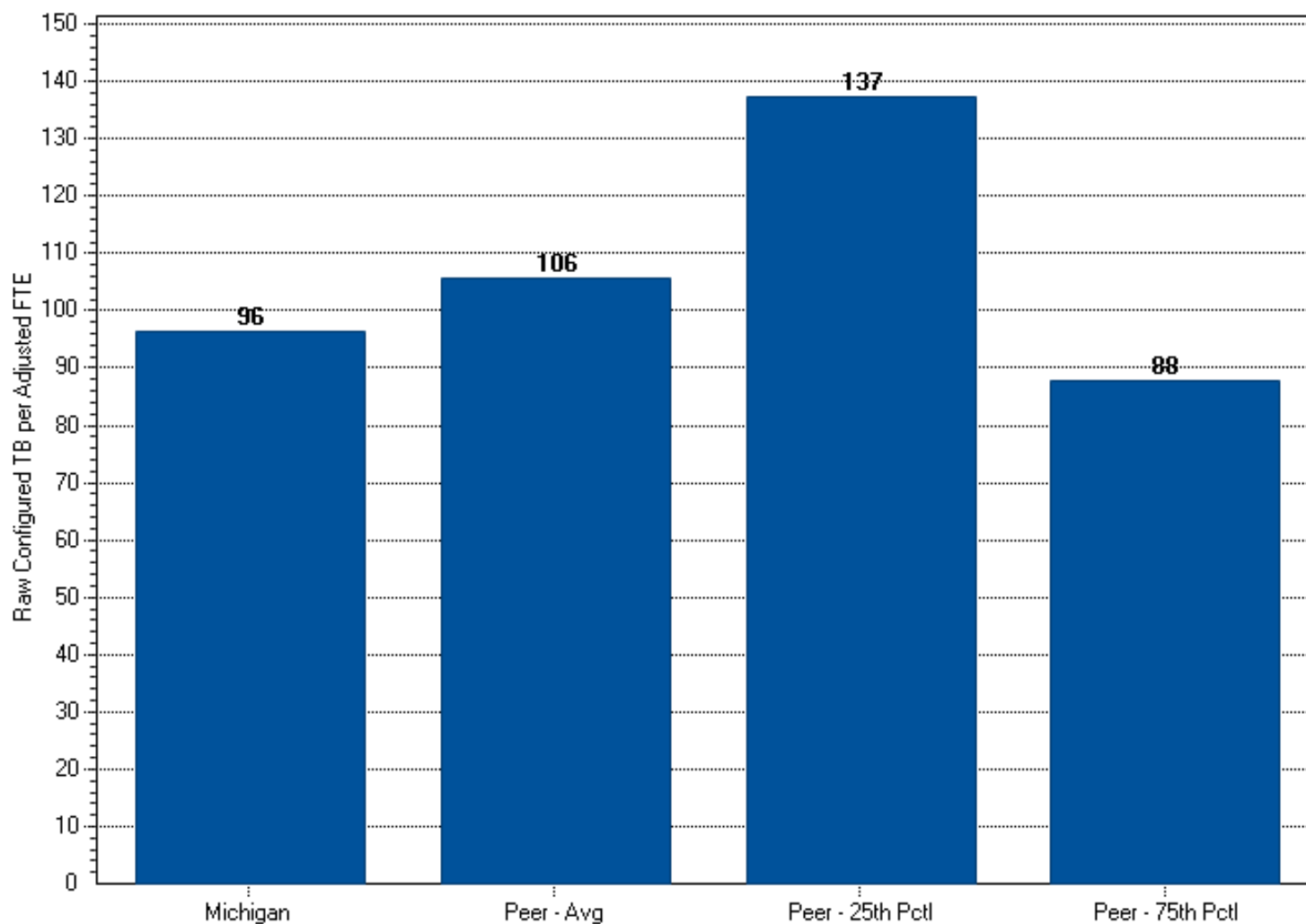
## IT Head Count (FTE) by Source



	Michigan	Peer - Avg	Peer - 25th Pctl	Peer - 75th Pctl
Insourced	45.6	49.9	38.4	59.9
Outsourced Equivalent	0.0	0.2	0.2	0.3
Contractor	10.6	1.1	0.9	1.4

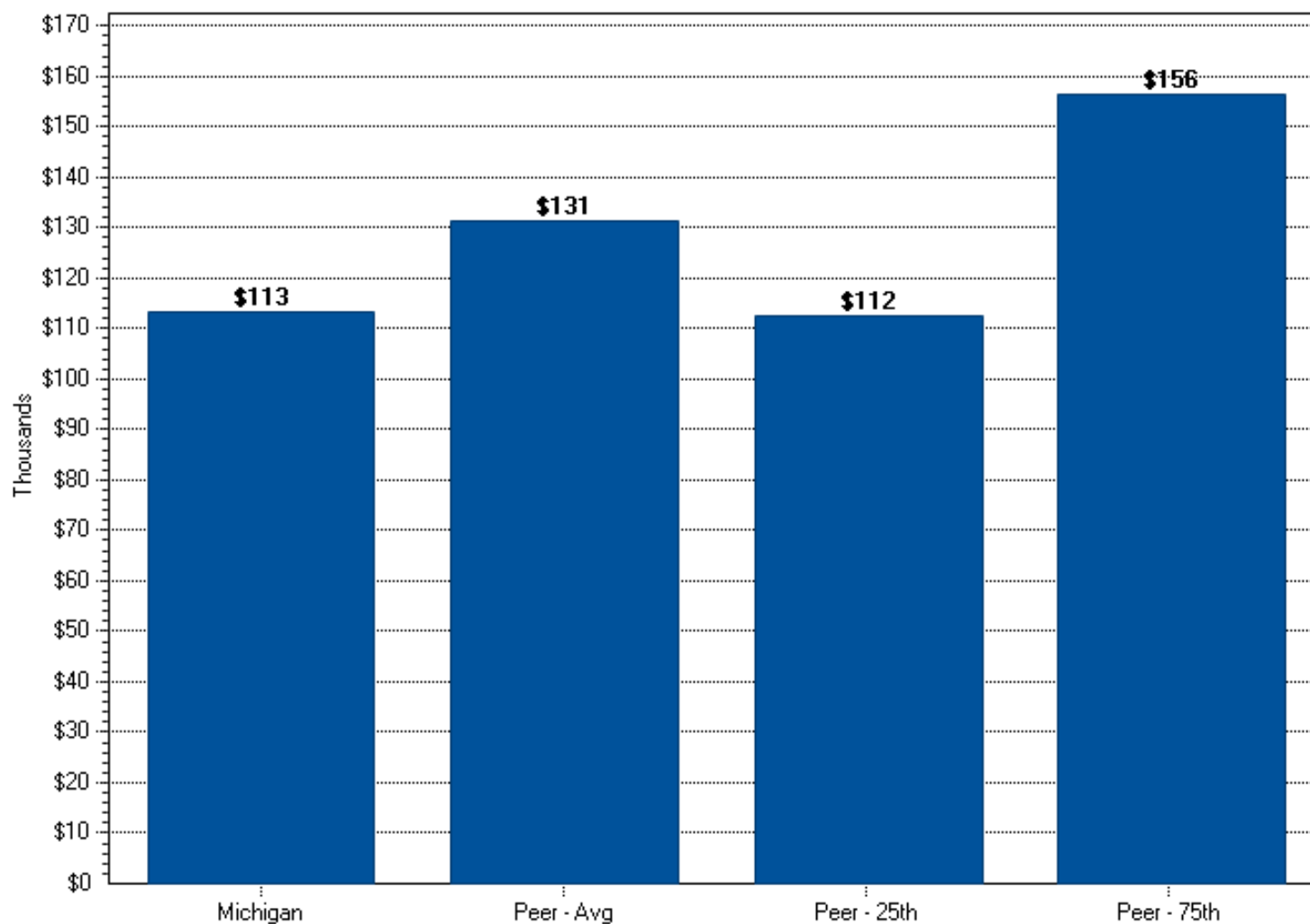
# Enterprise Storage

## Productivity — Raw Configured TB per Adjusted FTE



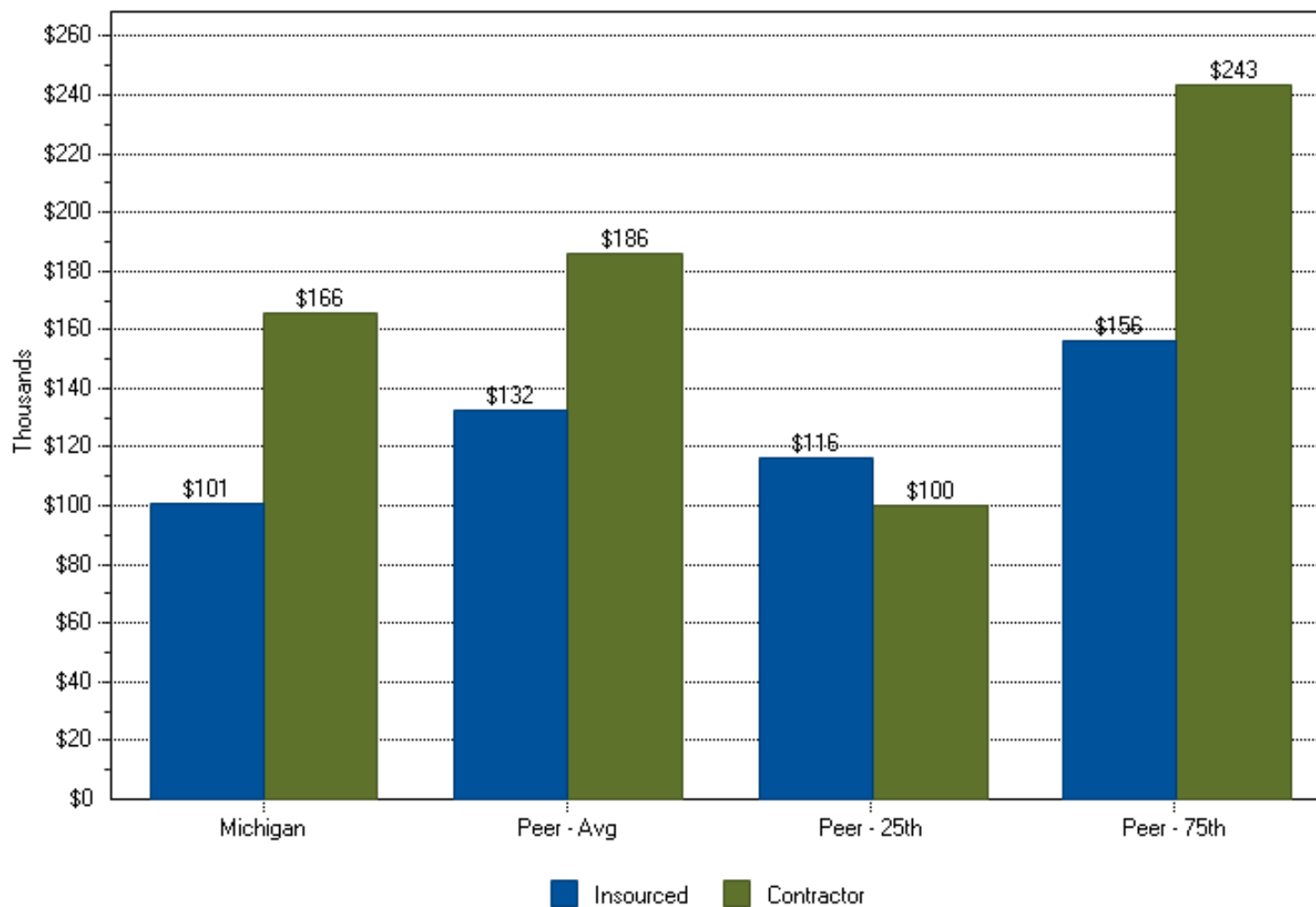
# Enterprise Storage

Cost per FTE — Insourced and Contractor Blended Total



# Enterprise Storage

## Cost per FTE by Source



## Appendix C

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### Applications Support Benchmark

# Table of Contents

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- Analysis Methodology
- Application Summary
- Analysis by Area
  - Applications Support Non-ERP (Custom, Vendor Package, Outsourced and Hosted)
  - Applications Support Contact Center CRM
  - Applications Support SAP PSCD (MIITAS)
  - Applications Support Lawson HRMN
  - Applications Support ORACLE e-Business Suite (LASR)

## Analysis Overview

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Objective

Scope

Approach

## Analysis Objectives

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- Gartner employed its benchmarking tools and methodology to create an accurate and consistent baseline of Michigan's IT infrastructure and applications.
  - Workload.
  - Costs and Cost Efficiency.
  - Staffing and Productivity.
- Gartner used appropriate surveys and interviews to gauge the effectiveness of IT within the business customer community.
- This baseline data, in addition to information gathered through Michigan-provided documents and other interviews, was used to create the common and accepted definition of the current or 'as-is' environment and the basis for Gartner's analysis and recommendations.
- Comparing this baseline to peer organizations, Gartner identified areas of cost efficiency and opportunities for improvement.
- The baseline will also be useful in the future when Michigan desires to quantify accurately the benefits received as the result of its transformation efforts.

# Analysis Scope

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## ■ Infrastructure Domains

- Client and Peripherals (Desktops, Laptops, etc.)
- IT Help Desk
- Data Networks (LAN, WAN and Internet Access)
- Voice Services (Local Service and Long Distance)
- Mainframe
- Midrange Servers (Wintel, Unix, etc.)
- Storage Management

## ■ Application Domains

- Application Support

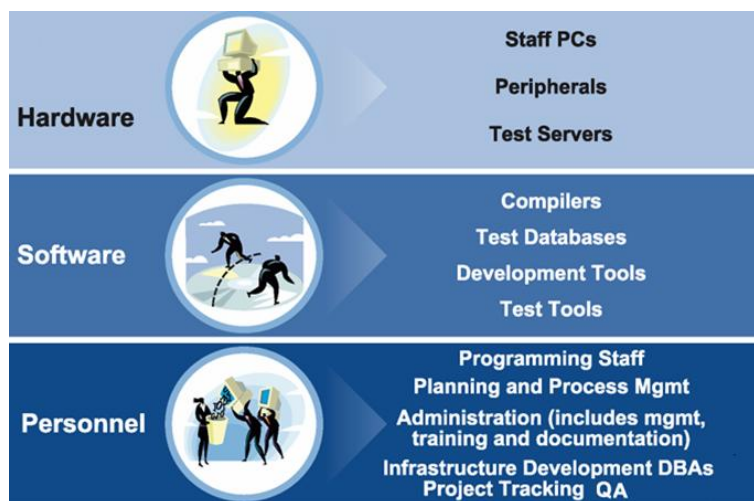
## ■ Business Effectiveness

- IT Business Effectiveness Survey
- IT CIO Scorecard
- IT CIO/LoB Survey

# Benchmark Analysis Methodology

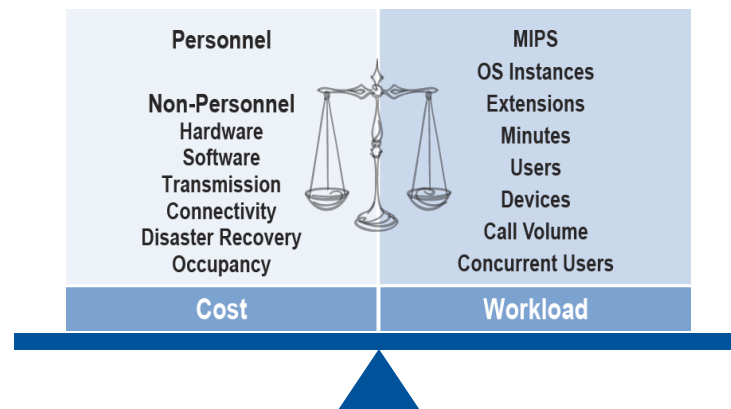
## Key Concepts

Adherence to “Consensus Models” ensures comparability



- Based on operational expense
- Labor is not depreciated

Workload represents a provided service and is balanced with cost



To compare with actual spending, an organization's workload is multiplied by their peers' average unit cost

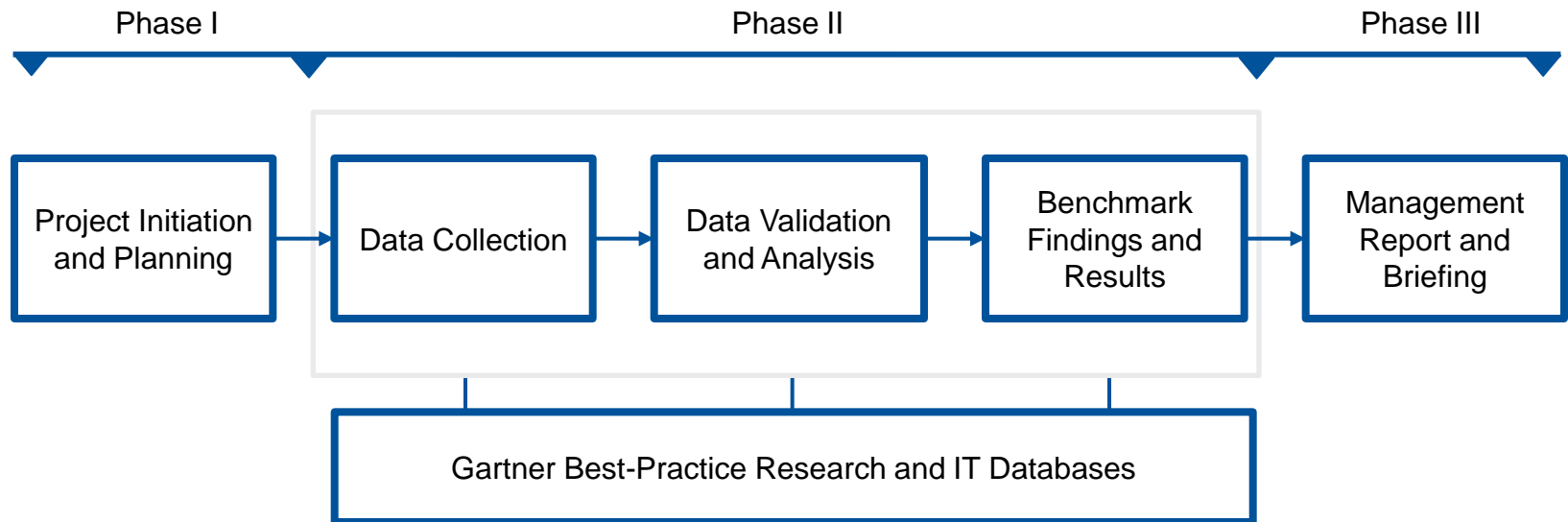
Sample

$$\begin{array}{rcl} 3,550 & \leftarrow & \text{The organization's installed MIPS count} \\ \times \$2,510 & \leftarrow & \text{Peers' average cost per installed MIPS} \\ \hline \$8,910,500 & \leftarrow & \text{Peers' cost for supporting the organization's installed MIPS} \end{array}$$

# Analysis Methodology and Timeline

## Our Approach

The following approach was utilized:



# Definitions

## Applications Support and Development

### Applications Support

- Maintenance of any duration
  - Problem Support and Resolution
  - Business Support
  - Corrective
  - Preventive
  - Adaptive
  - Perfective
- Functional enhancements
  - Less than or equal to two person-weeks

### Applications Development

- Brand-new applications
  - Initiation
  - High Level Requirements
  - Detailed Requirements
  - Design
  - Build
  - Accept
  - Stabilize
- Functional enhancements
  - Greater than two person-weeks

### Separate views for Applications Support and Application Development

**Application Support:** This includes staff involved in supporting applications that exist within the current production portfolio. This includes bug fixes, small enhancements, conversions, code refactoring, re-platforming, language upgrades, etc.

**Application Development:** This includes staff involved in developing new applications, enhancing existing applications, installing new packages and installing major functional enhancements to existing packages.

# Benchmark Analysis Methodology

## Workload Peer Comparisons

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- Independent peer groups are selected based on workload characteristics for each of the IT areas studied. Examples of workload characteristics include, but are not limited to, economies of scale, geographic dispersion, technology platforms analyzed, rate of change, transaction distribution and other factors that may contribute to complexity of support.
- The spending and support profile of each peer group is used to simulate what the comparative group would spend to support State of Michigan's workload. A composite model representing total IT spend in all areas included in the analysis has also been created.
- Results for State of Michigan are displayed in comparison with three peer group reference points:
  - Peer — Average: representing the average for the comparative group
  - Peer — Pctl\_25<sup>th</sup>: representing the low cost quartile for the comparative group
  - Peer — Pctl\_75<sup>th</sup> representing the high cost for the comparative group
- Differences in spending and other metrics derived from this analysis provide insight into opportunities for increased cost efficiency and reduced risk.

## Application Summary

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# Application Support and Development

## Peer Demographics

IT Functional Area	Workload Metric	State of Michigan	Peer
Non-ERP Application Support	Function Point	Function Points 1,648,808 with 68 applications submitted	Function Points 1,532,914 6 Public Sector 5 Federal and 1 State
Contact Center Siebel CRM	Named Account	CRM with varied amount of customization (depends on CSD)	5 Organizations 1 Healthcare, 1 Utility, 1 Business Services and 2 Public Sector
SAP Public Sector Control Distribution	Named Account	Named Accounts 700 SAP PSCD with medium amount of customization	Named Accounts 741 and medium amount of customization 8 Public Sector within the U.S. and Canada
Lawson HRMN	Named Account	Named Accounts 57,000 with a medium amount of customization	Named Accounts 64,260 with 1 Publishing , 1 Aerospace, 1 Manufacturing, Communications 1 Bank and 2 Education
ORACLE e-Business Suite (LASR)	Named Account	Named Accounts 400 with high amount of customization	1 Retail , 1 Research and 2 Financial Services

## Overview and Key Findings

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# Application Support

## Key Observations

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- State of Michigan IT spend to sustain their 2156\* application portfolio at \$143.4M aligns closest with the peer 75<sup>th</sup> percentile (high cost) organizations
  - State of Michigan indicates a high technical complexity which supports 14 DBMSs, 15 Operating Systems, 55 Computer Languages and 150+ Support Tools. While there are plans to sunset/retire and modernize a number of applications, continued support adds substantial cost to Michigan.
  - Lawson HRMN (medium customization) was the only ERP which indicated low cost compared with the peers. Heavy customization, integration to packages and defect repair will often account for the cost. ORACLE e-Business, SIEBEL CRM and SAP PSCD (MIITAS) are highly customized packages which indicate high cost to support.
  - Software COTS/ERPs Package costs are high for a number of applications. There was indication from some of the managers that some of these applications generate a significant amount of revenue for the State, but there are others that need to be re-evaluated and either replaced with another package, or re-negotiated with the vendor. CHAMPS, Vision ORS, ESKORT, LEIN, COMPAS are exhibit high cost to support.

\* List includes a number of non-applications such as software utilities and infrastructure products

# Application Support

## Key Observations

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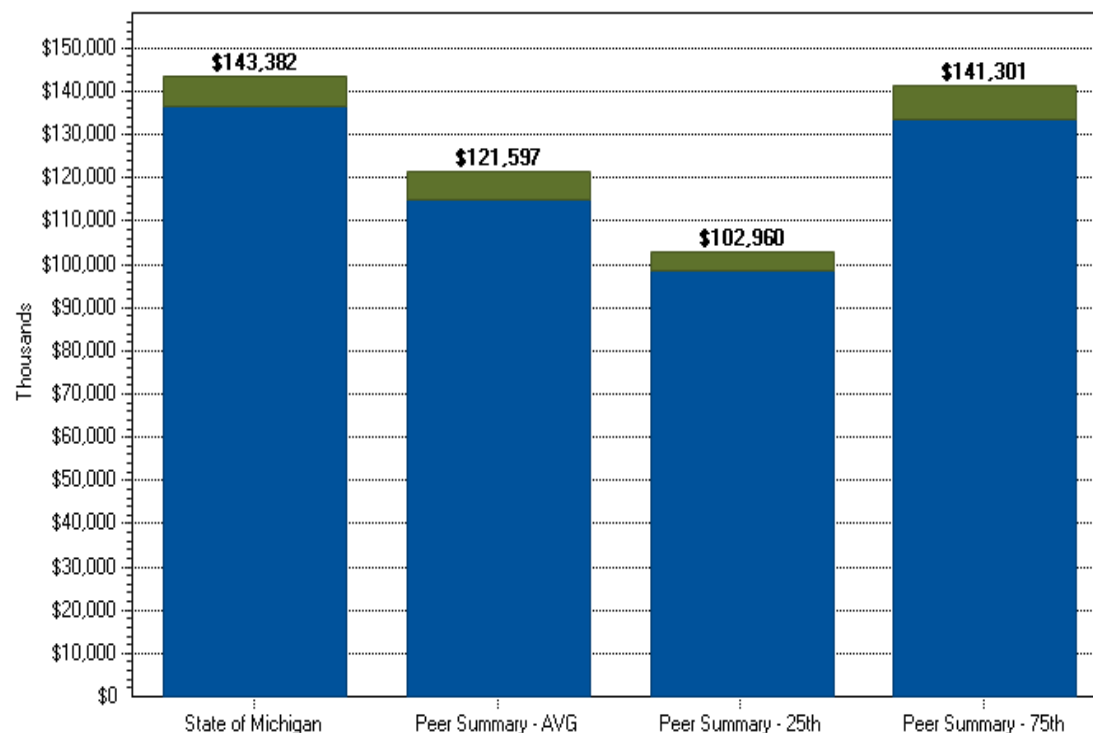
- State of Michigan cost efficiency for applications at \$85 per Function Point indicates a reading very similar to the peer 75<sup>th</sup> percentile at \$86 per FP. The Gartner Database Average is \$56 per FP and the Public Sector Peer average is \$74 per FP, which is often attributed to regulatory support.
  - DHS, the largest agency with about 37% of IT Spend is running at \$67 per Function Point .
  - A number of the smaller agencies such as AG, DNR, DEQ, MDA have low cost per FP, but are a small sphere of influence.
  - Midsize agencies, from an IT Spend perspective, such as DCH, Michigan.gov, MB&DCSC, MSP and DOS indicate a high cost per FP. While defects and labor workflow were not collected to assist with determining why support cost is high, older architected applications require more cost to sustain.
- Total Spend for personnel is less than the Peer Average, primarily driven by fewer Business Analysts (Only IT).
  - State of Michigan total staffing at 787.1 FTEs is 17% less than the peer average of 950.1 FTEs.
  - State of Michigan supplemental workforce represents 41% compared with the peer at 26% (319.1FTEs compared with 248.3 FTEs for the peer).
  - Cost per FTE is higher at \$132K vs. \$109K for the peer and is driven by heavy use of high priced contractor staff.

# Application Support

## Total Spending by Functional Area

- State of Michigan spend for Applications Sustainment at \$143.4M is within range of the peer 75<sup>th</sup> percentile
- State of Michigan IT spend for Non-ERP aligns closest with the peer 75<sup>th</sup> percentile while spend for ERP applications is almost the same as the peer average

*Spend by Functional Area*



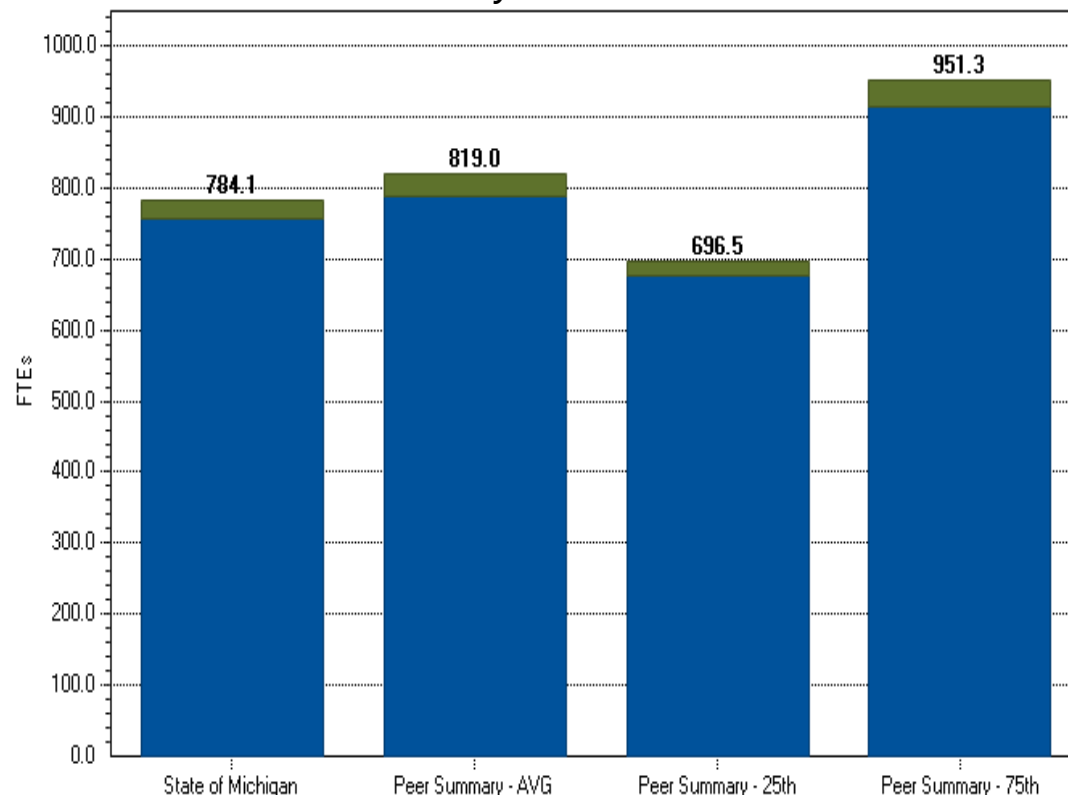
	State of Michigan	Peer Summary - AVG	Peer Summary - 25th	Peer Summary - 75th
■ Application Support	\$136,744	\$115,017	\$98,587	\$133,427
■ Application Support - ERP	\$6,639	\$6,580	\$4,373	\$7,874

# Application Support

## FTE by Functional Area

- State of Michigan utilizes fewer FTEs for both ERP and Non-ERP applications sustainment than the peer average, primarily driven by fewer Business Analysts
- State of Michigan's Non-ERP IT head count is 4% less than the peer average
- Application Support ERP FTEs is 12% less than the peer average

*FTE by Functional Area*



	State of Michigan	Peer Summary - AVG	Peer Summary - 25th	Peer Summary - 75th
Applications Support	757.4	788.8	676.1	915.1
Applications Support - ERP	26.7	30.2	20.4	36.2

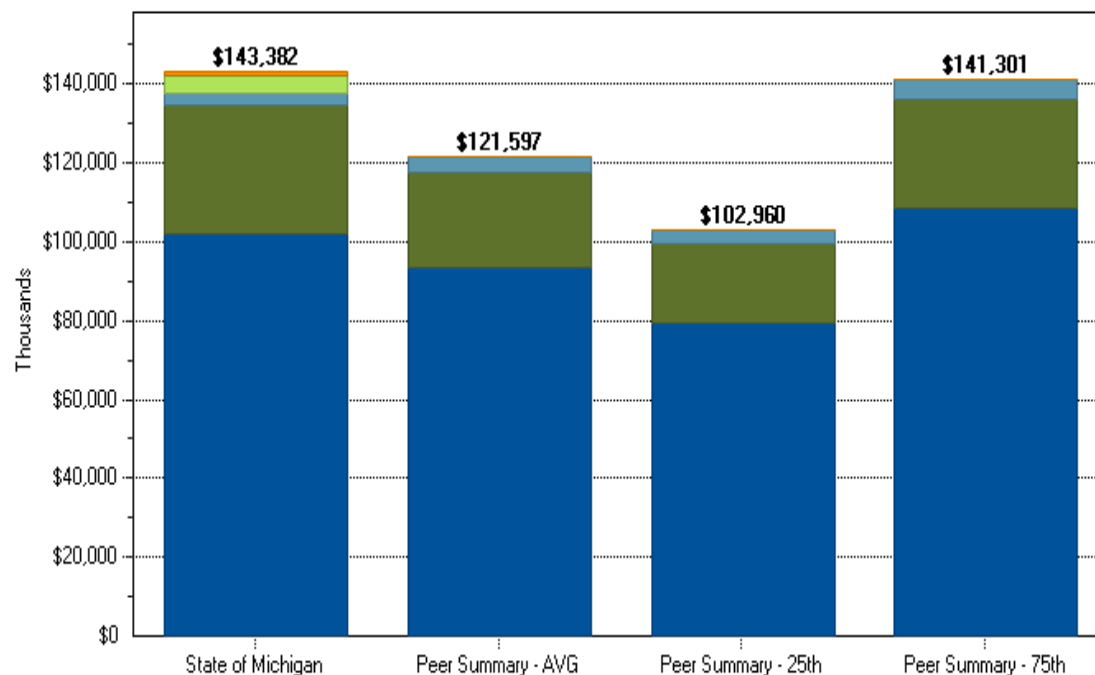
\* Fixed Price Outsourced dollars are converted to FTEs

# Application Support

## Total Spending by Cost Category

- Personnel cost is 6% less than the peer average (\$6.3M) for applications sustainment
- Software costs are significantly high than the peer average and align more with the peer 75<sup>th</sup> percentile
- Occupancy cost is less than the peer organizations as there are fewer IT resources
- Unallocated Total Cost represents fixed price costs for outsource work while Unallocated Non-Personnel are significantly higher than the peer organizations

*Spend by Cost Category*



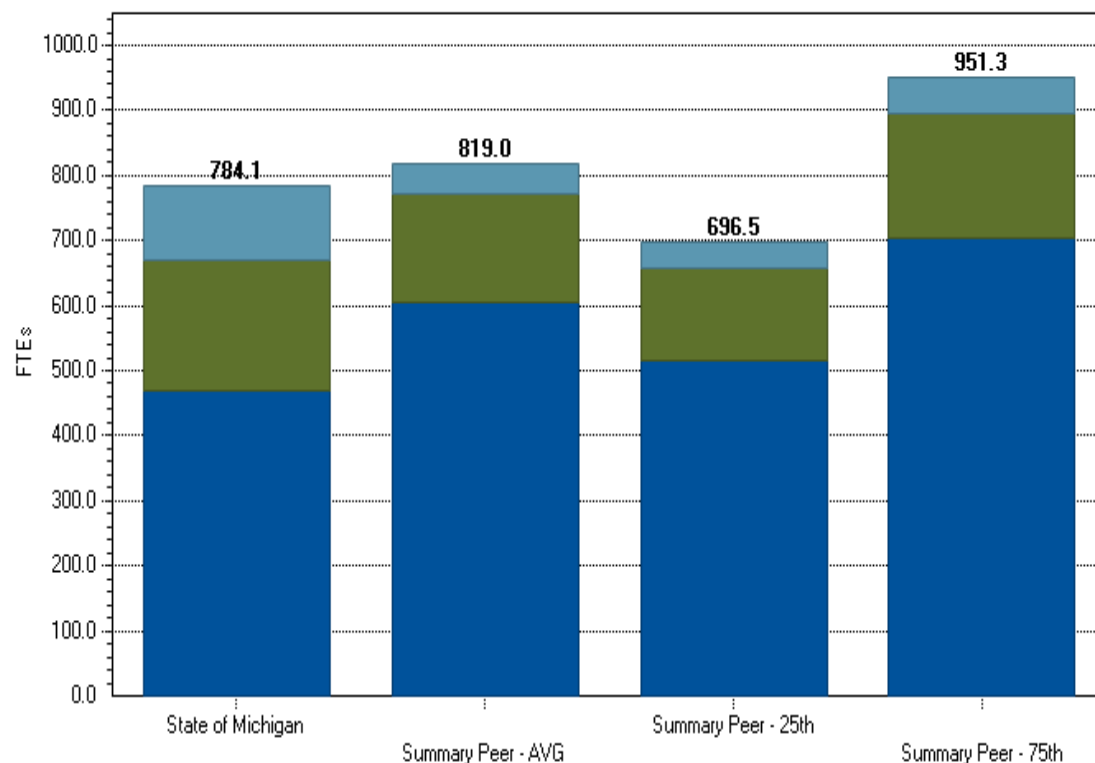
	State of Michigan	Peer Summary - AVG	Peer Summary - 25th	Peer Summary - 75th
Personnel	\$101,790	\$93,268	\$79,258	\$108,343
Software	\$33,017	\$24,067	\$20,089	\$28,006
Occupancy	\$2,993	\$4,262	\$3,613	\$4,952
Unallocated Non-Personnel	\$4,191	\$0	\$0	\$0
Unallocated Total	\$1,392	\$0	\$0	\$0

# Application Support

## FTE by Source

- State of Michigan's staff size at 784.1 FTEs is 4% less than the peer average
- State of Michigan supplemental workforce which includes both contractors and outsourced resources represents 40% compared with the peer at 26% (315.5 FTEs compared with 214.2 FTEs for the peer average).

*FTE by Source*



	State of Michigan	Summary Peer - AVG	Summary Peer - 25th	Summary Peer - 75th
In-sourced	468.6	604.8	514.0	702.5
Contractor	202.7	167.2	142.7	194.1
Outsourced	112.8	47.0	39.8	54.7

# Application Support

## Definition of FTE

---

### ■ Full-Time-Equivalent Head count

- Personnel data was assigned to Gartner model categories based on the functional definitions provided. If an individual or group performs more than one function, the State prorated personnel based on your estimates of time spent in each area.
- Gartner uses the full-time equivalent (FTE) concept in defining staff resources. The State did not count the physical staff but counted the logical staff by looking at the functions performed by the physical staff and for which they are responsible.
- FTEs were measured in calendar time, that is, if an individual works full time on an assignment for a full year that is one FTE. The State did not subtract vacation time, sick days, administration time and so forth. If the labor-tracking system shows, for example, 220 days actually worked, that represents one FTE in the enterprise.
- It was possible for the State to count less than one logical person for a physical person when not all of that individual's time falls within the scope of this analysis.
- All staffing levels within the organization from managers and project leaders to daily operations personnel were submitted by the State. The State reported summarized data for all categories to show the average staff level, adjusting for timing.
- FTEs included employees, contractors and outsourced staff. Fixed Price Outsourced dollars were also converted to FTEs

# Application Support

## FTE by Job Category

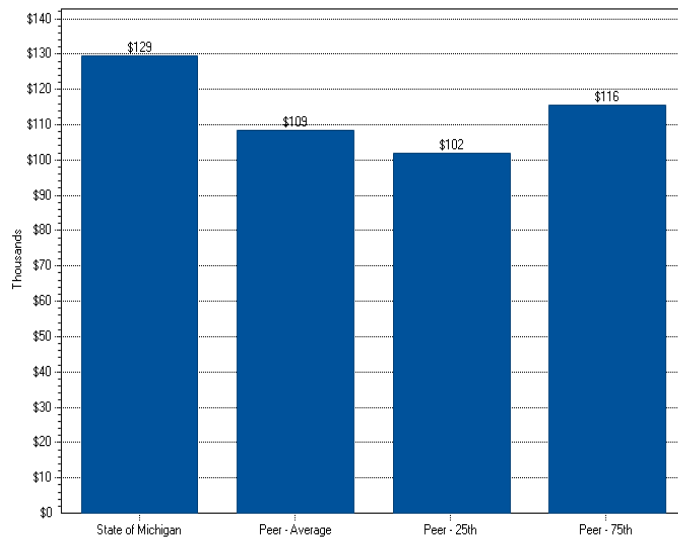
- State of Michigan developer FTEs at 542.2 indicates a high number compared with the peer average. There is a variance of 9% higher compared with the peer average
- State of Michigan is utilizing significantly more Quality Assurance resources which would indicate the need for a centralized Quality Assurance Function
- Business Analysts are significantly less than the peer organizations, 64% less than the peer average. Business Analysts for the peer group reside in IT and the Business
- Project Management resources are less than the peer average and the peer 25<sup>th</sup> percentile while Management resources are in range of the peer 75<sup>th</sup> percentile
- Management resources at 81.4 FTEs is high compared the peer 75<sup>th</sup> percentile
- Services Administration indicates the widest variance when compared with the peer organizations

Job Category	SOM 11	Peer AVG	Peer 25th	Peer 75th	Variance to Peer Average	SOM 11 Percentage	Peer Average Percentage
Developers, DBA and Infrastructure	542.2	496.5	423.7	577.8	9.20%	69.15%	60.62%
Quality Assurance	43.2	30.4	25.7	35.2	42.11%	5.51%	3.71%
Business Analyst	46.1	112.1	95.1	130.1	-58.88%	5.88%	13.69%
Project Management	40.5	44.8	37.5	61	-9.60%	5.17%	5.47%
Management and Administration	81.4	62.6	53	72	30.03%	10.38%	7.64%
Services Administration	21	72.6	61.5	75.2	-71.07%	216.49%	8.86%
Unallocated	9.7	0	0	0		1.24%	0.00%
Total	784.1	819	696.5	951.3	-4.26%	313.82%	100.00%

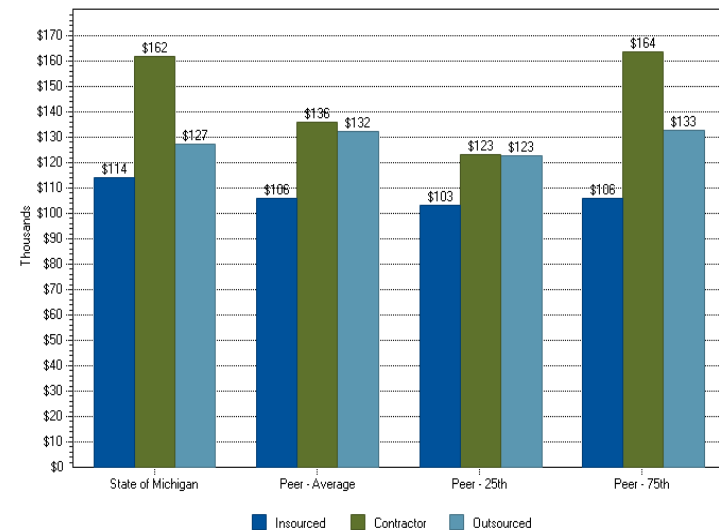
# Applications Support

## Total Cost Per FTE

### Blended Cost per FTE



### Cost per FTE — insourced, Contractor and Outsource



- State of Michigan's cost per FTE at \$129 is 18% higher than the peer group average primarily driven by high contractor costs
- State of Michigan Non-ERP yearly contractor rates at \$162K are 19% higher compared with the peer average of \$136K
- State of Michigan yearly contractor/outsourced rates for ERP SAP, ORACLE and Siebel are extremely high at \$384K, \$187K and \$293K compared with the peer average of \$185K, \$145K and \$190K respectively

# Executive Summary

## Cost Efficiency

- Application Support cost efficiency for non-ERP applications at \$83 per Function Point is 26% higher than the peer average at \$74 per Function Point.
  - A number of agencies are contributing to the higher cost per FP such as Michigan.gov, Community Health, MSP State Police and MB & DCSC Civil Service

Non-ERP				Spend/Workload	Workload/FTEs				
Name	Total Spend	Total FTE	Workload	Cost Efficiency	Productivity	Personnel	Outsource	COTS & Tool Software	Occupancy
Michigan.gov	\$ 4,223,508	15.00	11,765	\$ 359	784	\$ 4,097,808	\$ -	\$ 72,000	\$ 53,700
DHS Human Services	\$ 46,637,423	253.50	665,530	\$ 70	2,625	\$ 37,272,582	\$ -	\$ 8,239,379	\$ 1,125,462
TREA Treasury	\$ 8,210,426	46.84	118,125	\$ 70	2,522	\$ 5,455,857	\$ -	\$ 2,544,960	\$ 209,609
AG Attorney General	\$ 184,662	0.31	3,993	\$ 46	12,881	\$ 35,311	\$ -	\$ 147,964	\$ 1,387
DCH Community Health	\$ 26,420,817	114.60	213,014	\$ 124	1,859	\$ 12,900,620	\$ -	\$ 13,384,604	\$ 135,593
DNR Natural Resources	\$ 2,153,231	16.04	49,265	\$ 44	3,071	\$ 1,151,598	\$ 843,659	\$ 112,732	\$ 45,242
DEQ Environment Quality	\$ 1,368,382	10.29	31,546	\$ 43	3,066	\$ 798,487	\$ 466,376	\$ 72,149	\$ 31,370
MDARD Agriculture	\$ 366,736	2.62	23,646	\$ 16	9,025	\$ 233,509	\$ 81,730	\$ 42,323	\$ 9,174
MDOS State Department	\$ 2,474,776	13.34	29,732	\$ 83	2,229	\$ 1,650,634	\$ -	\$ 764,445	\$ 59,697
MDOT Transportation	\$ 8,636,978	47.61	112,744	\$ 77	2,368	\$ 5,839,436	\$ -	\$ 2,584,465	\$ 213,077
MB&MCSC Civil Service	\$ 10,988,135	86.70	98,329	\$ 112	1,134	\$ 9,687,949	\$ -	\$ 916,678	\$ 383,508
MDE Education	\$ 5,421,895	35.80	84,134	\$ 64	2,350	\$ 4,725,350	\$ -	\$ 566,546	\$ 129,999
LARA Lansing	\$ 8,035,213	47.00	96,179	\$ 84	2,046	\$ 5,586,088	\$ -	\$ 2,238,800	\$ 210,325
LARA Detroit UIA CR	\$ 4,043,596	30.58	38,369	\$ 105	1,255	\$ 3,706,121	\$ -	\$ 200,629	\$ 136,846
MSP State Police	\$ 3,862,059	17.00	16,657	\$ 232	980	\$ 2,071,021	\$ -	\$ 1,714,963	\$ 76,075
MDOC Corrections	\$ 3,099,027	14.00	50,841	\$ 61	3,632	\$ 1,632,677	\$ -	\$ 1,403,700	\$ 62,650
Lottery	\$ 203,352	1.55	1,628	\$ 125	1,050	\$ 176,556	\$ -	\$ 19,860	\$ 6,936
MGCB Gaming Commission	\$ 413,590	3.10	3,311	\$ 125	1,068	\$ 353,111	\$ -	\$ 46,606	\$ 13,873
<b>Total State of Michigan</b>	<b>\$ 136,743,806</b>	<b>757.40</b>	<b>1,648,808</b>	<b>\$ 82.93</b>	<b>2,177</b>	<b>\$ 97,374,715</b>	<b>\$ 1,391,765</b>	<b>\$ 35,072,803</b>	<b>\$ 2,904,523</b>

# Executive Summary

## Cost Efficiency

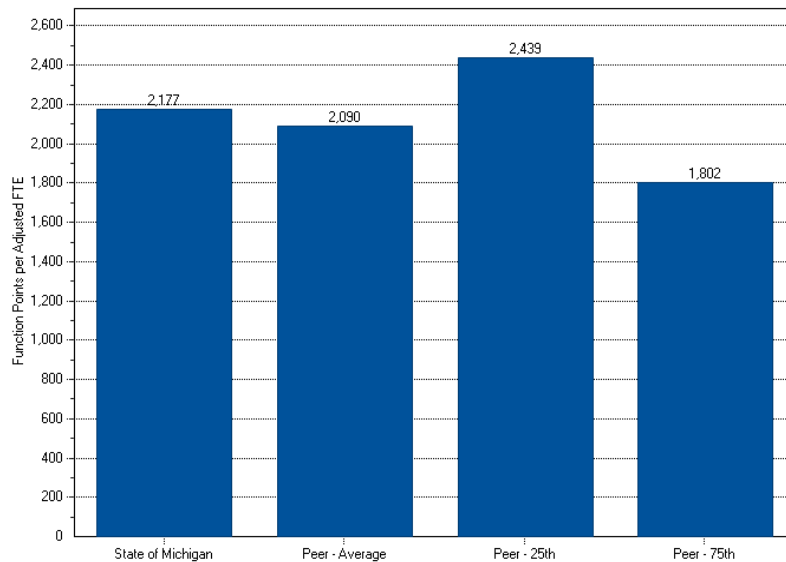
ERP									
Name	Total Spend	Total FTE	Workload	Cost Efficiency	Productivity	Personnel	Hosting	COTS & Tool Software	Occupancy
Contact Center Siebel	\$ 3,280,998	10.50	1,310	\$ 2,505	125	\$ 2,452,334	\$ -	\$ 813,000	\$ 15,663
DHS Human Services ORACLE e_bu	\$ 967,171	4.50	400	\$ 2,418	89	\$ 585,255	\$ -	\$ 361,778	\$ 20,138
TREA Treasury SAP PSCD	\$ 781,456	3.71	700	\$ 1,116	189	\$ 472,594	\$ -	\$ 292,260	\$ 16,602
CSC Lawson HRMN	\$ 1,608,893	7.95	57,000	\$ 28	7,170	\$ 905,207	\$ -	\$ 668,110	\$ 35,576
<b>Total State of Michigan</b>	<b>\$ 6,638,518</b>	<b>26.66</b>	<b>59,410</b>	<b>\$ 112</b>	<b>2,228</b>	<b>\$ 109,729,635</b>	<b>\$ 1,391,765</b>	<b>\$ 40,593,709</b>	<b>\$ 3,288,882</b>

- Overall ERP Applications cost efficiency at \$112 per Named Account indicates a number of variances. Lawson HRMN indicates the least expensive cost as the application requires fewer resources and at a lower cost per FTE.
- SAP PSCD (MIITAS) required a similar number of resources at the peer group average to support the application during a major development upgrade in FY11.
- Siebel CRM and ORACLE e-Business ERPs exhibit high cost compared with the peer group average. High priced contractors/outsourced resources are driving the numbers.

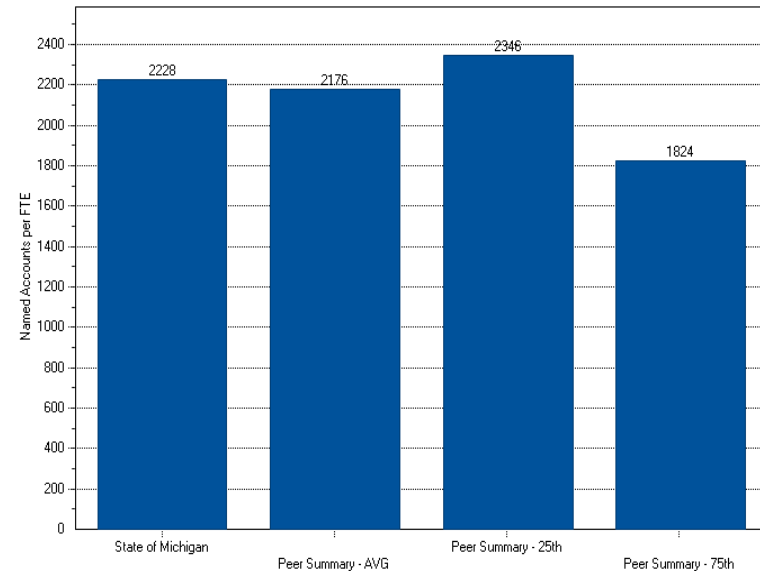
# Applications Support

## Productivity

### Productivity — FPs per FTE



### Productivity — FPs per Named Account



- Non-ERP Applications Support productivity at 2,177 FPs per FTE is high compared with the peer average. A number of agencies such as Michigan.gov, DCH, MDOS, MB&DCSC and MSP are several agencies with low productivity. Review applications in the appendix with low productivity. While defect data collection was not conducted for this study, quality metrics should be evaluated.
- ERP Applications Support productivity at 2,228 FPs per FTE is within range of the peer average

## Analysis by Area

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Non ERP Support

# Non-ERP Applications

## Peer Demographics

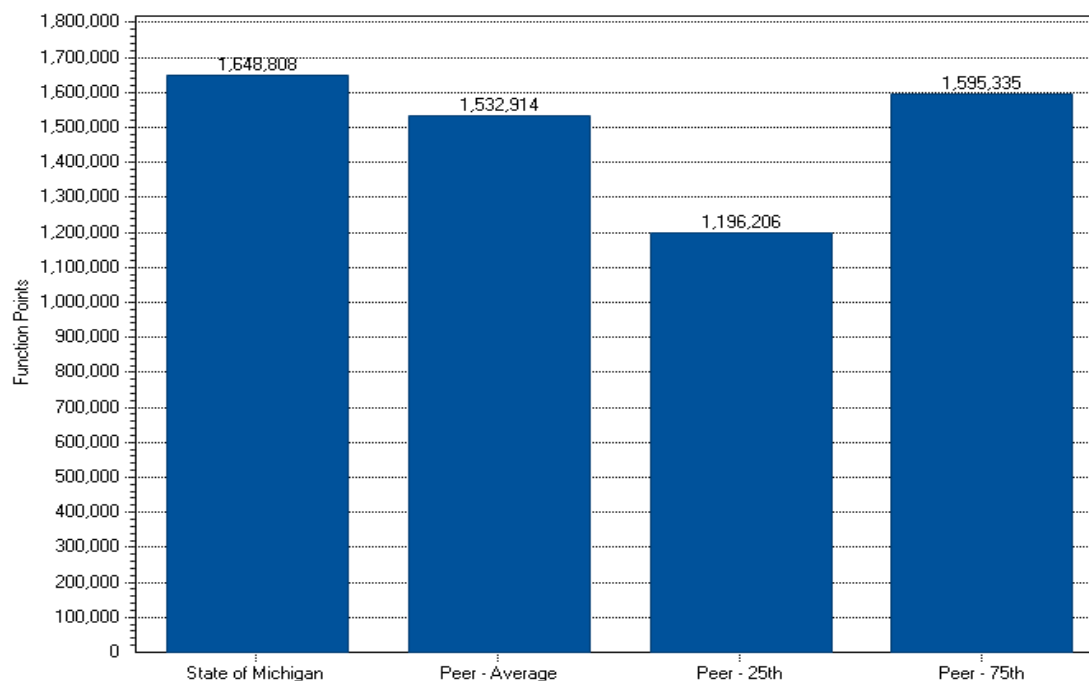
### ■ State of Michigan Demographics

- Function Points  
1,648,808 with 72 application/components submitted
- 14 DBMS Technologies, 15 Operating Systems, 55 Computer Languages and 150+ Support Tools

### ■ Peer Demographics

- Function Points  
1,532,914
- 6 Public Sector
  - 5 Federal (non-Military) and 1 State
- 6 DBMS Technologies, 8 Operating Systems, 37 Computer Languages and 82 Support Tools

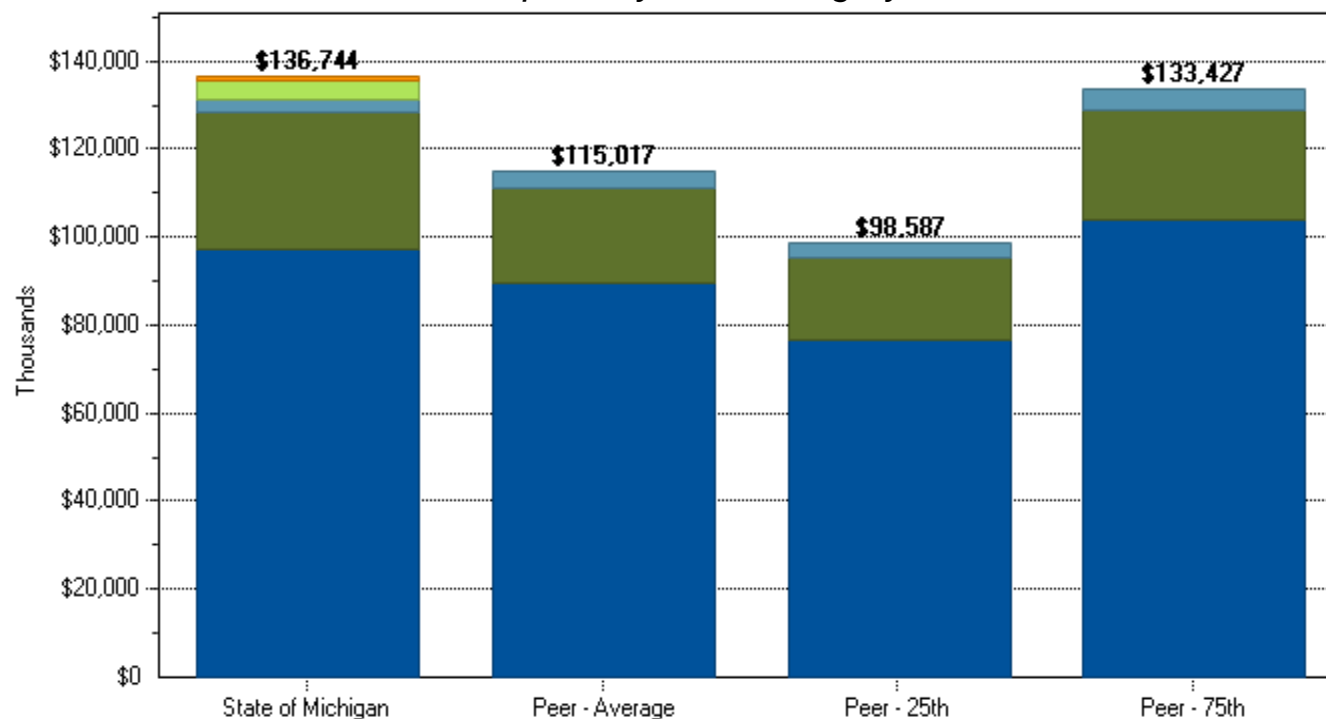
*Function Points*



# Non-ERP Applications

## Spend by Cost Category

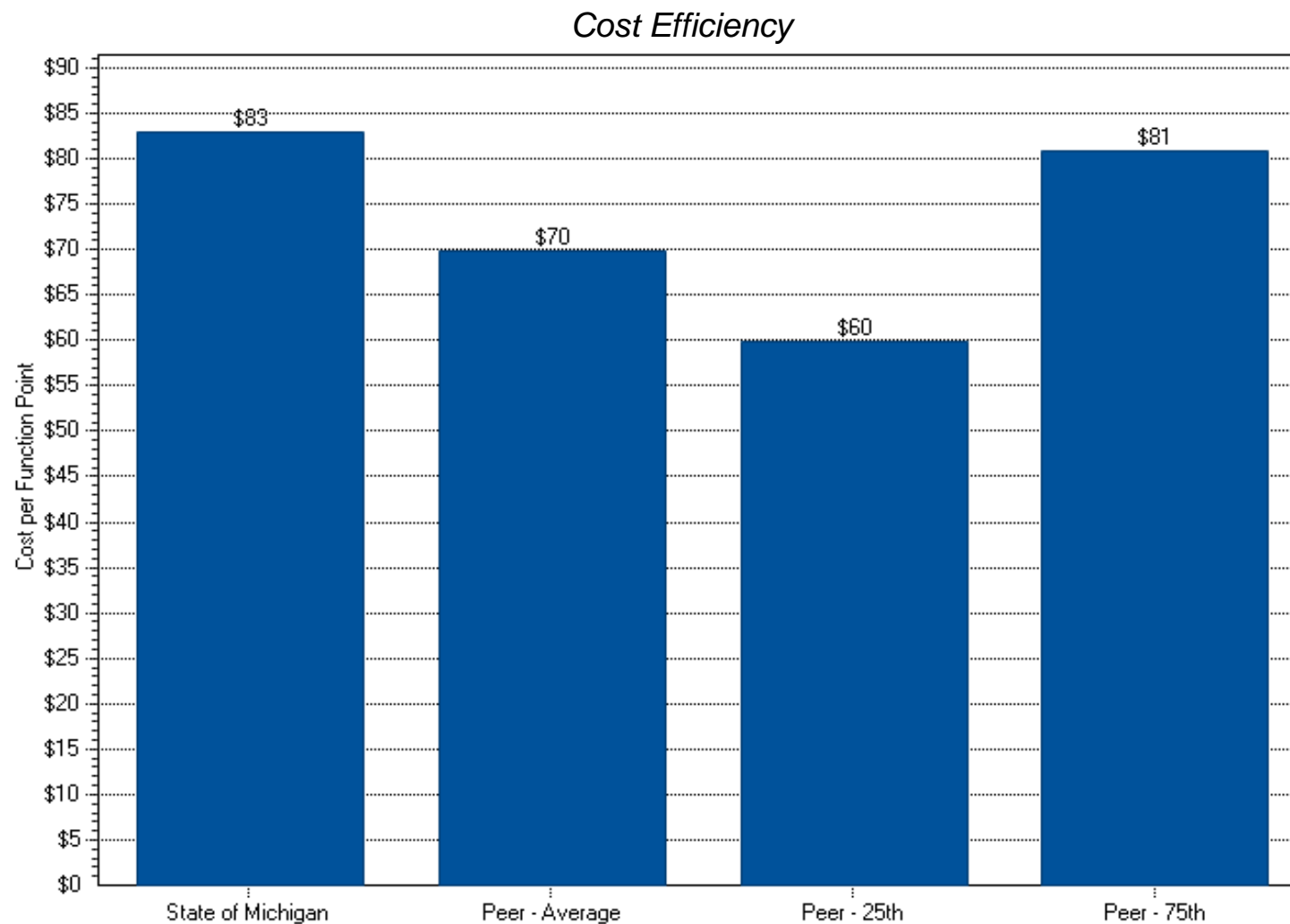
*Spend by Cost Category*



	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
Personnel	\$97,375	\$89,628	\$76,825	\$103,974
Software	\$30,882	\$21,334	\$18,287	\$24,749
Occupancy	\$2,905	\$4,055	\$3,475	\$4,704
Unallocated Non-Personnel	\$4,191			
Unallocated Total	\$1,392			

# Non-ERP Applications

## Cost Efficiency



# Non-ERP Applications

## Cost Efficiency by Agency

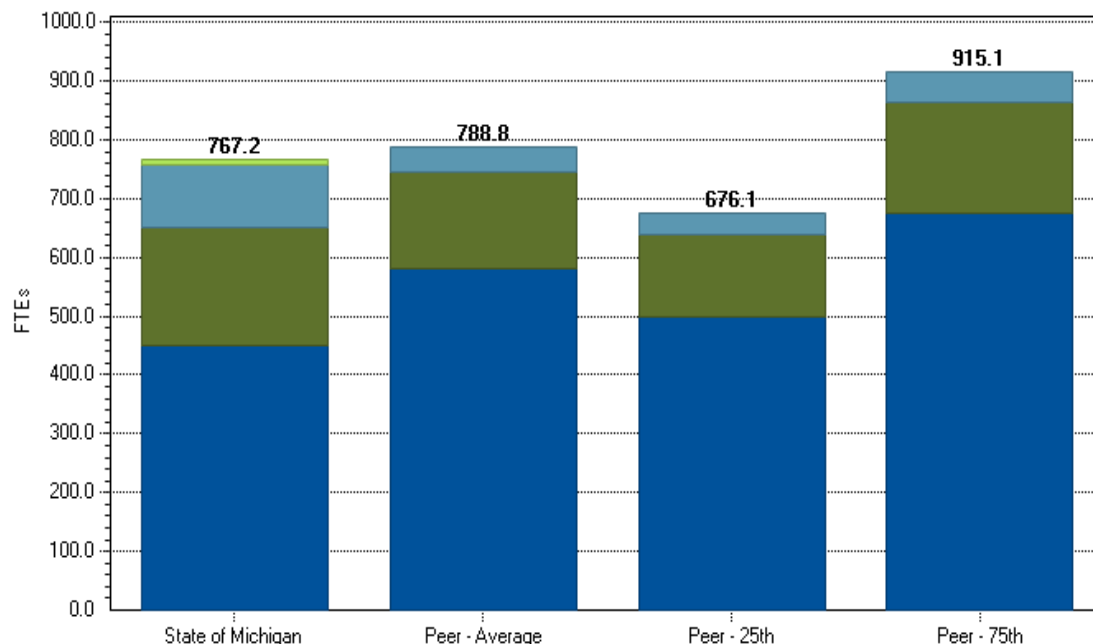
Non-ERP				Spend/Workload	Workload/FTEs				
Name	Total Spend	Total FTE	Workload	Cost Efficiency	Productivity	Personnel	Outsource	COTS & Tool Software	Occupancy
Michigan.gov	\$ 4,223,508	15.00	11,765	\$ 359	784	\$ 4,097,808	\$ -	\$ 72,000	\$ 53,700
DHS Human Services	\$ 46,637,423	253.50	665,530	\$ 70	2,625	\$ 37,272,582	\$ -	\$ 8,239,379	\$ 1,125,462
TREA Treasury	\$ 8,210,426	46.84	118,125	\$ 70	2,522	\$ 5,455,857	\$ -	\$ 2,544,960	\$ 209,609
AG Attorney General	\$ 184,662	0.31	3,993	\$ 46	12,881	\$ 35,311	\$ -	\$ 147,964	\$ 1,387
DCH Community Health	\$ 26,420,817	114.60	213,014	\$ 124	1,859	\$ 12,900,620	\$ -	\$ 13,384,604	\$ 135,593
DNR Natural Resources	\$ 2,153,231	16.04	49,265	\$ 44	3,071	\$ 1,151,598	\$ 843,659	\$ 112,732	\$ 45,242
DEQ Environment Quality	\$ 1,368,382	10.29	31,546	\$ 43	3,066	\$ 798,487	\$ 466,376	\$ 72,149	\$ 31,370
MDARD Agriculture	\$ 366,736	2.62	23,646	\$ 16	9,025	\$ 233,509	\$ 81,730	\$ 42,323	\$ 9,174
MDOS State Department	\$ 2,474,776	13.34	29,732	\$ 83	2,229	\$ 1,650,634	\$ -	\$ 764,445	\$ 59,697
MDOT Transportation	\$ 8,636,978	47.61	112,744	\$ 77	2,368	\$ 5,839,436	\$ -	\$ 2,584,465	\$ 213,077
MB&MCSC Civil Service	\$ 10,988,135	86.70	98,329	\$ 112	1,134	\$ 9,687,949	\$ -	\$ 916,678	\$ 383,508
MDE Education	\$ 5,421,895	35.80	84,134	\$ 64	2,350	\$ 4,725,350	\$ -	\$ 566,546	\$ 129,999
LARA Lansing	\$ 8,035,213	47.00	96,179	\$ 84	2,046	\$ 5,586,088	\$ -	\$ 2,238,800	\$ 210,325
LARA Detroit UIA CR	\$ 4,043,596	30.58	38,369	\$ 105	1,255	\$ 3,706,121	\$ -	\$ 200,629	\$ 136,846
MSP State Police	\$ 3,862,059	17.00	16,657	\$ 232	980	\$ 2,071,021	\$ -	\$ 1,714,963	\$ 76,075
MDOC Corrections	\$ 3,099,027	14.00	50,841	\$ 61	3,632	\$ 1,632,677	\$ -	\$ 1,403,700	\$ 62,650
Lottery	\$ 203,352	1.55	1,628	\$ 125	1,050	\$ 176,556	\$ -	\$ 19,860	\$ 6,936
MGCB Gaming Commission	\$ 413,590	3.10	3,311	\$ 125	1,068	\$ 353,111	\$ -	\$ 46,606	\$ 13,873
<b>Total State of Michigan</b>	<b>\$ 136,743,806</b>	<b>757.40</b>	<b>1,648,808</b>	<b>\$ 82.93</b>	<b>2,177</b>	<b>\$ 97,374,715</b>	<b>\$ 1,391,765</b>	<b>\$ 35,072,803</b>	<b>\$ 2,904,523</b>

# Non-ERP Applications

## Staffing by Source Category

- State of Michigan staffing is 767.2 FTEs adjusted with fixed price outsourced dollars converted to FTEs (9.8 FTEs)
- Staff size is 3% less than the peer average
- Staff augmentation accounts for 41% of the staff as compared with 26% for the peer average (316.8 FTEs compared with 207 FTEs for the peer average)

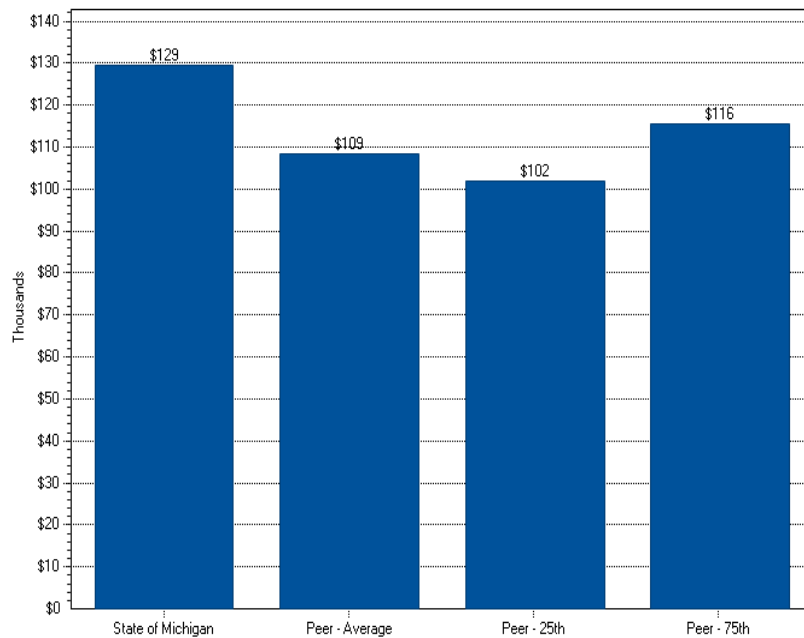
Staffing by Source Category



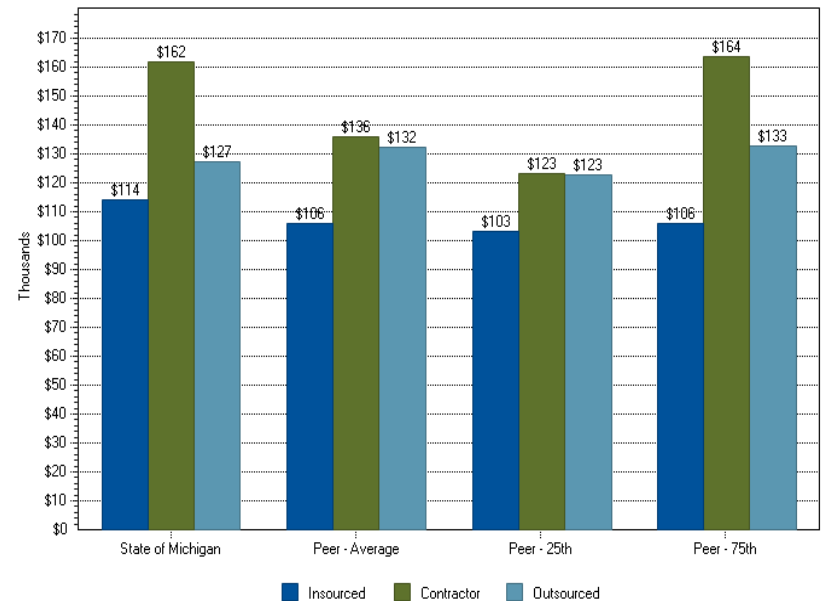
	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
Insourced	450.3	581.8	498.7	675.0
Contractor	201.3	163.7	140.3	189.9
Outsourced	105.8	43.3	37.1	50.2
Unallocated	9.8			

# Non ERP Applications Staff

## Blended Cost per FTE

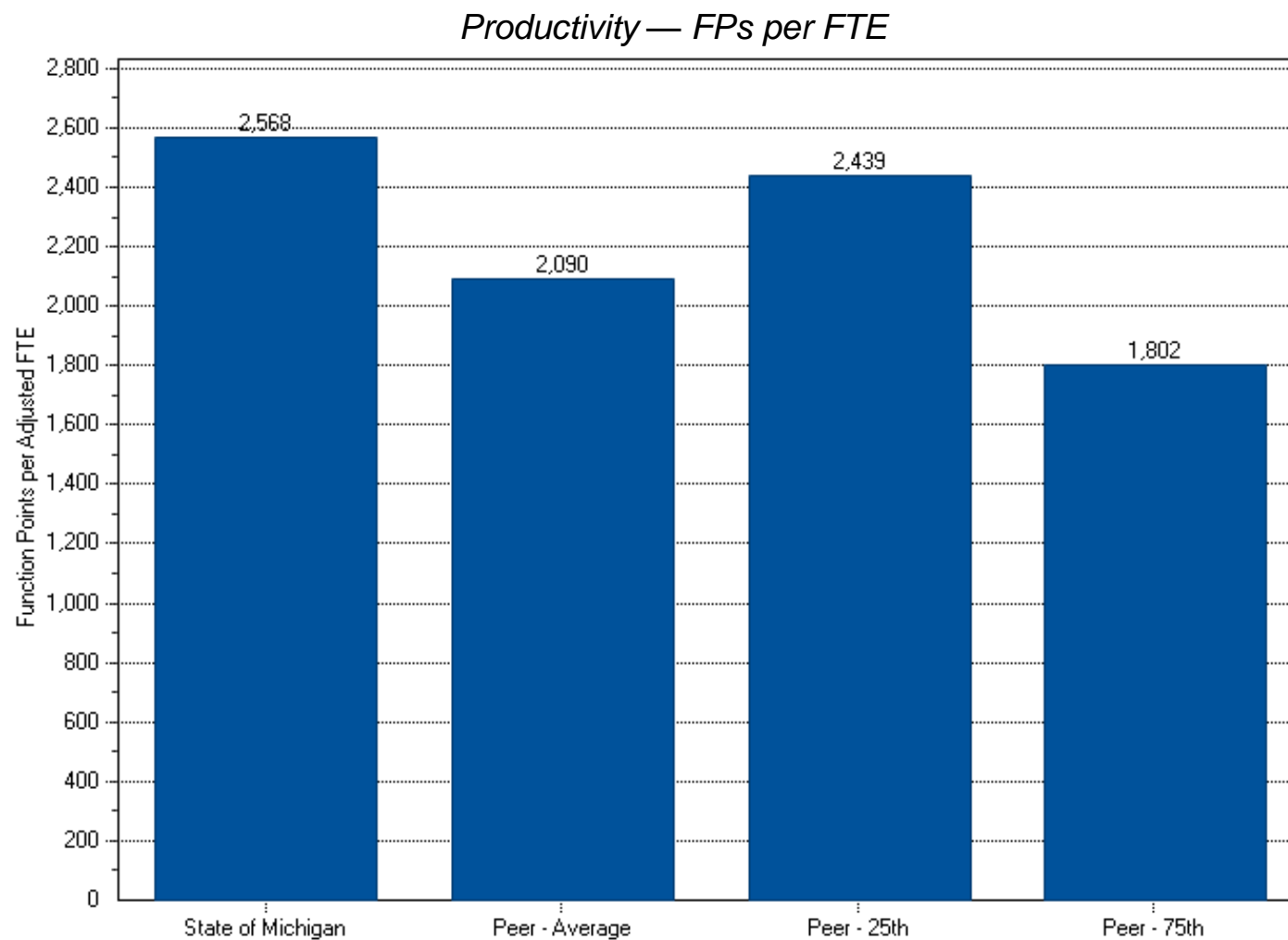


## Cost per FTE — insourced, Contractor and Outsource



# Non-ERP Applications

## Productivity



## Analysis by Area

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ERP Contact Center Siebel CRM Applications Support

# Applications Contact Center Siebel CRM

## Peer Demographics

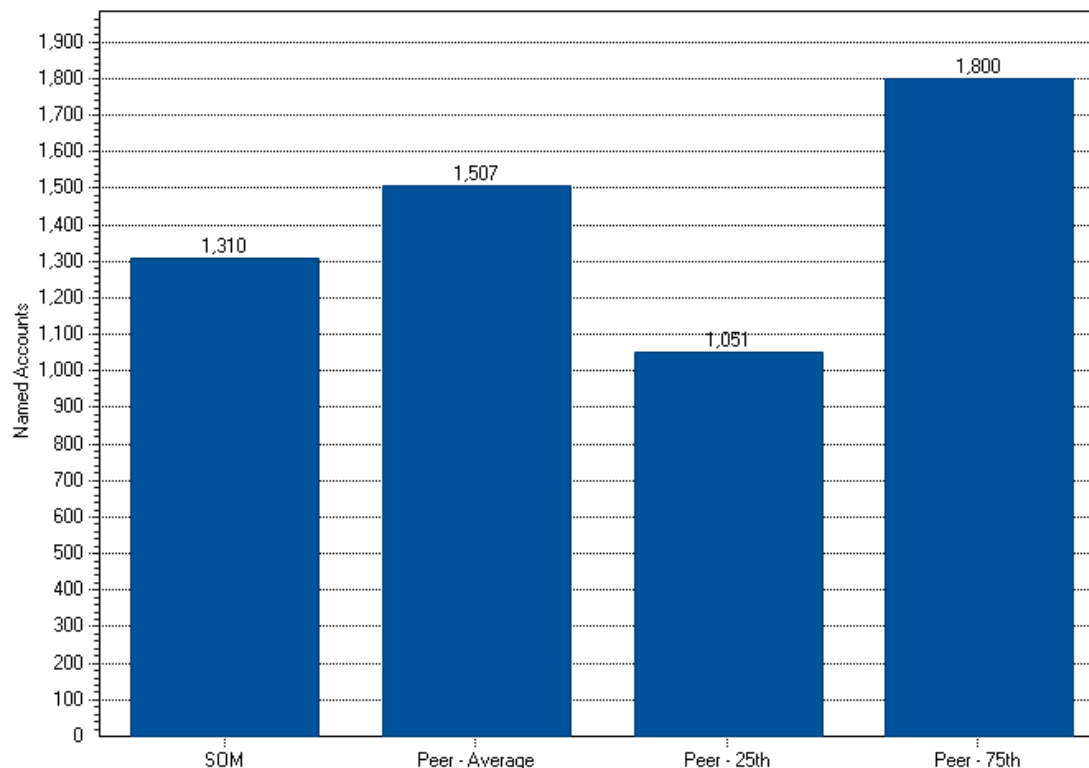
### ■ State of Michigan

- Named Accounts 1,310
- Siebel CRM with varied amount of customization (depends on agency)

### ■ Peer Demographics

- Named Accounts 1,507
- 3 Organizations and 2 Public Sector
  - 1 Healthcare, 1 Utility, 1 Business Services and 2 Public Sector (1 State and 1 Government)

### *Named Accounts*

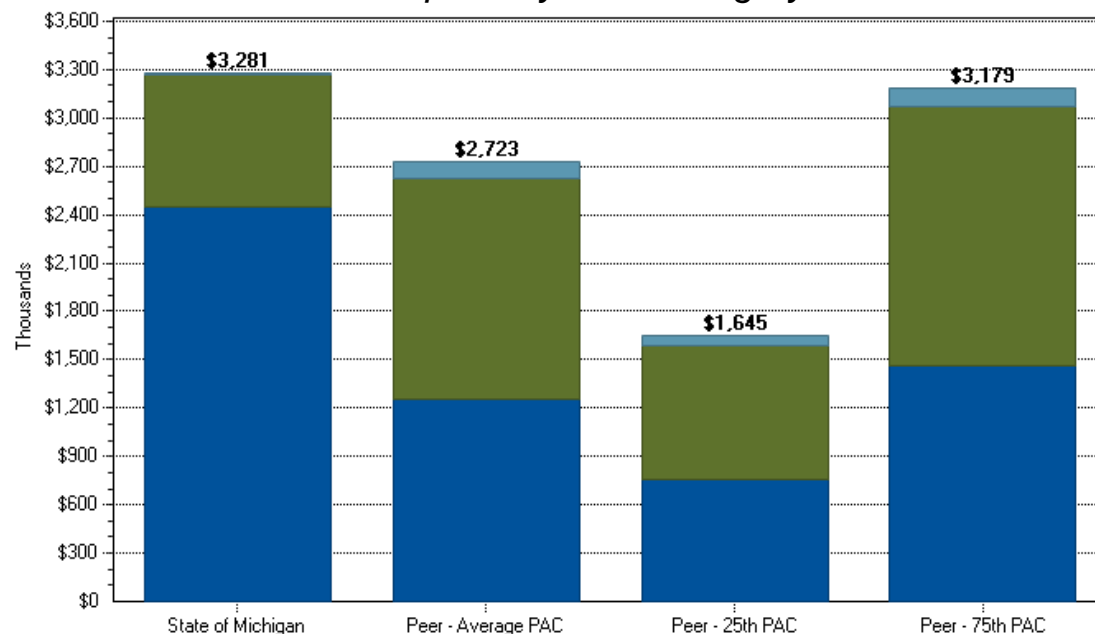


# Applications Contact Center Siebel CRM

## Spend by Cost Category

- State of Michigan IT spend at \$3.3M includes software vendor package software only and facility costs
- IT spend excludes hardware cost and software cost for tools and DBMs (SOM only)

*Spend by Cost Category*

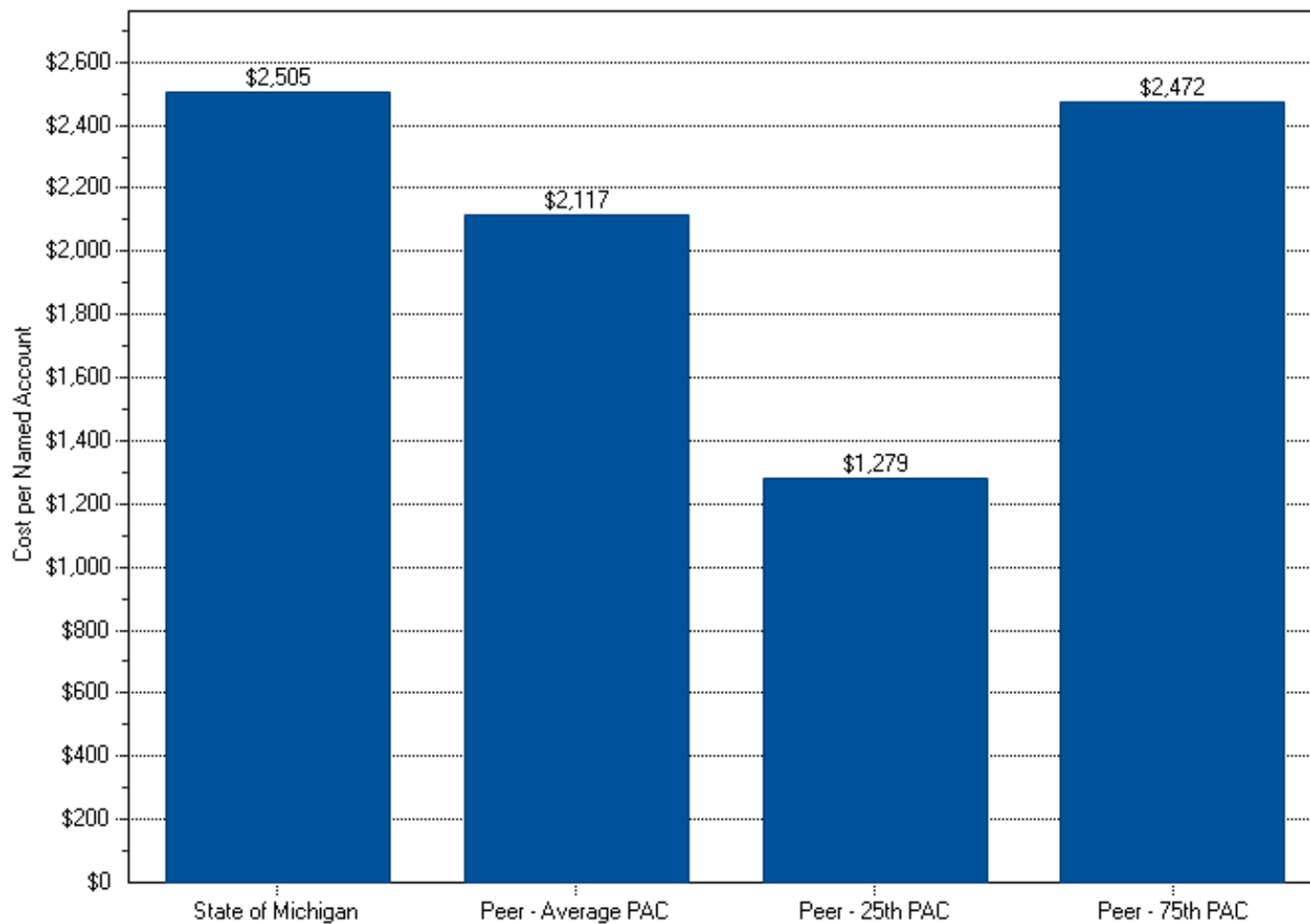


	State of Michigan	Peer - Average PAC	Peer - 25th PAC	Peer - 75th PAC
Personnel	\$2,452	\$1,256	\$759	\$1,466
Software	\$813	\$1,372	\$829	\$1,602
Occupancy	\$16	\$95	\$58	\$111

# Applications Contact Center Siebel CRM

## Cost Efficiency

*Cost Efficiency — Named Account*

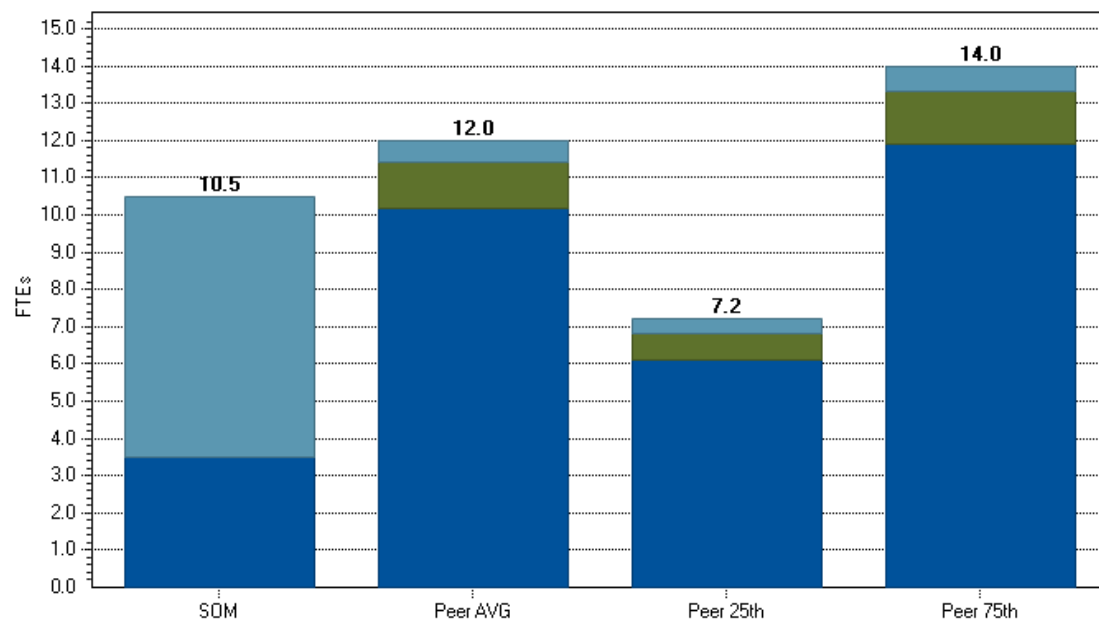


# Applications Contact Center Siebel CRM

## Staffing

- State of Michigan IT Staff at 10.5 FTEs aligns closest with the peer average
- State of Michigan staff augmentation is 67% while the peer is at 15%

*Staffing by Source Category*

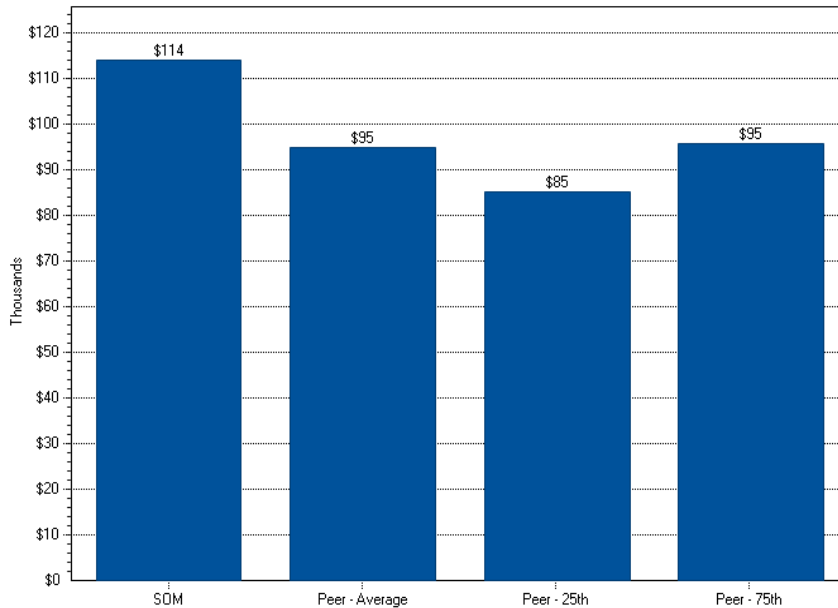


	SOM	Peer AVG	Peer 25th	Peer 75th
Insourced	3.5	10.2	6.1	11.9
Contractor		1.2	0.7	1.4
Outsourced	7.0	0.6	0.4	0.7

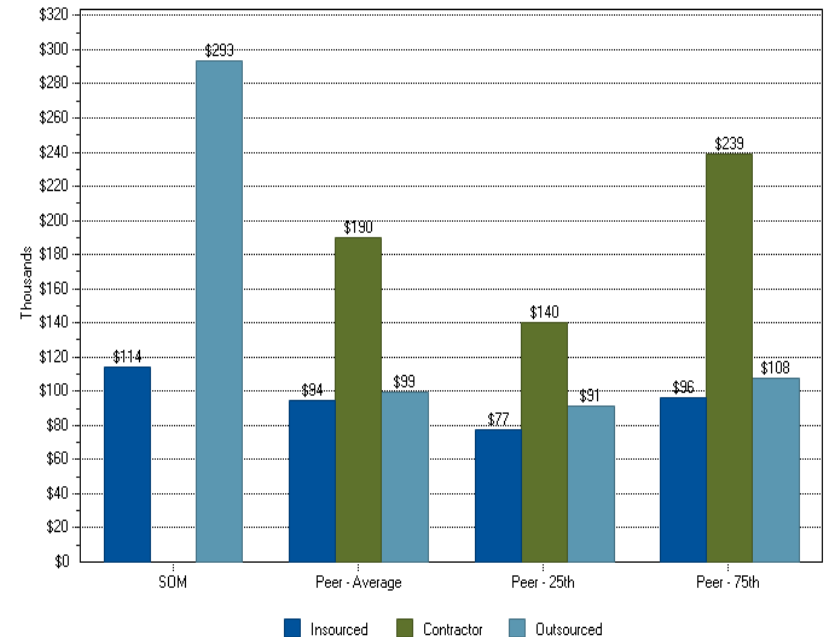
\* Peer Group includes Support Projects

# Applications Contact Center Siebel CRM Staffing

## Blended Cost per FTE



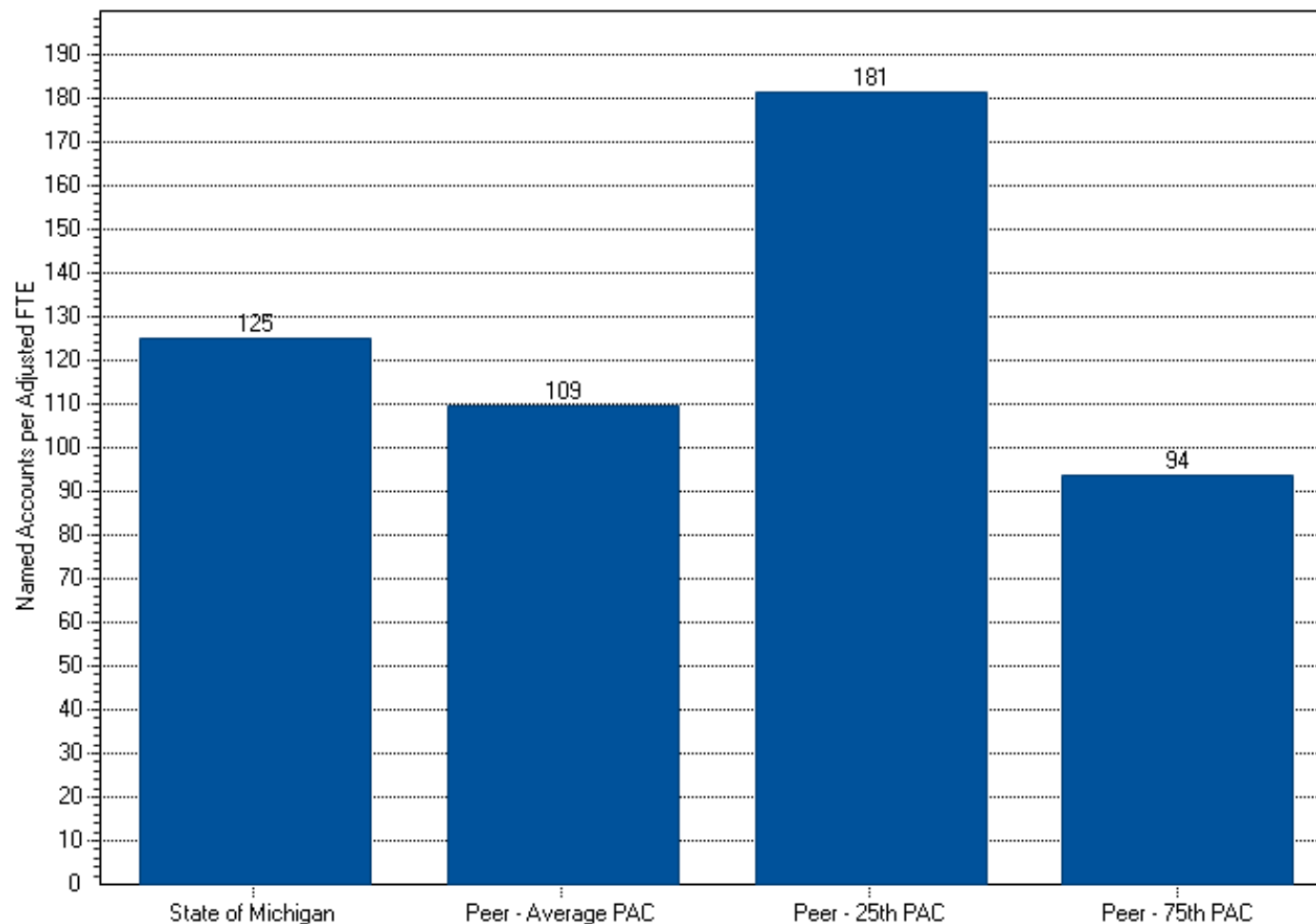
## Cost per FTE — insourced vs. Contractor



# Applications Contact Center Siebel CRM

## Productivity

*Productivity — Named Accounts per FTE*



## Analysis by Area

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SAP Public Sector Collection & Distribution Applications Support

# Applications SAP Public Sector Collection & Distribution (MIITAS)

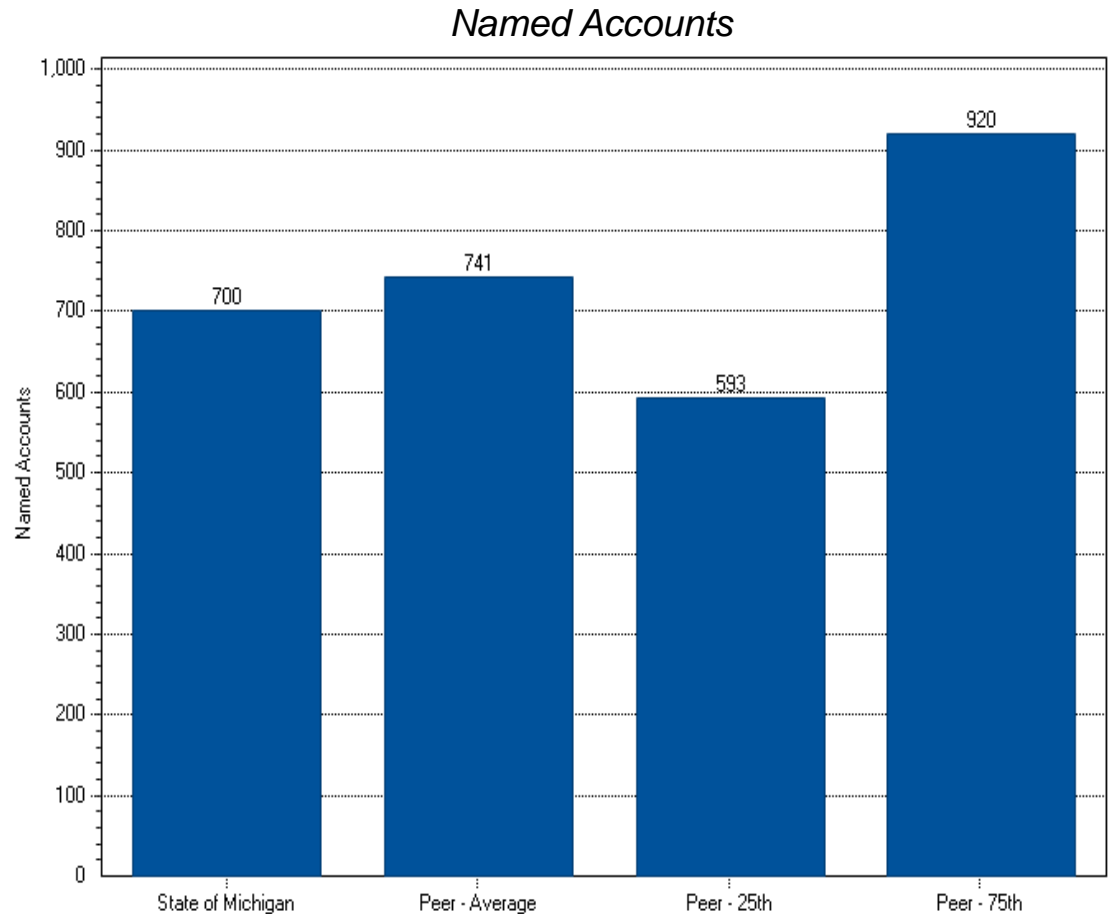
## Peer Demographics

### ■ State of Michigan PSCD Module

- Named Accounts 700
- Medium amount of customization

### ■ Peer Demographics

- Named Accounts 741
- Medium amount of customization
- 8 Public Sector (Canadian & US)

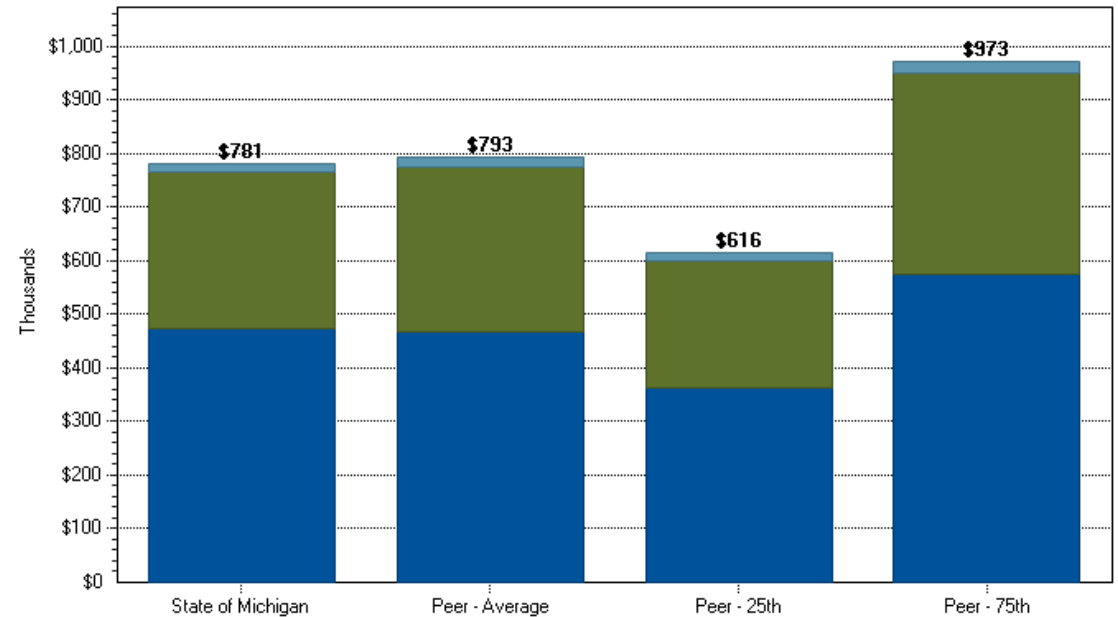


# Applications SAP Public Sector Collection & Distribution

## Spend by Cost Category

- State of Michigan IT spend at \$781K includes software vendor package software only and facility costs
- IT spend excludes hardware cost and software cost for tools and DBMs (SOM only)
- SAP PSCD spend falls within range of the peer group average (Note: Significant IT Spend was transferred to project development)

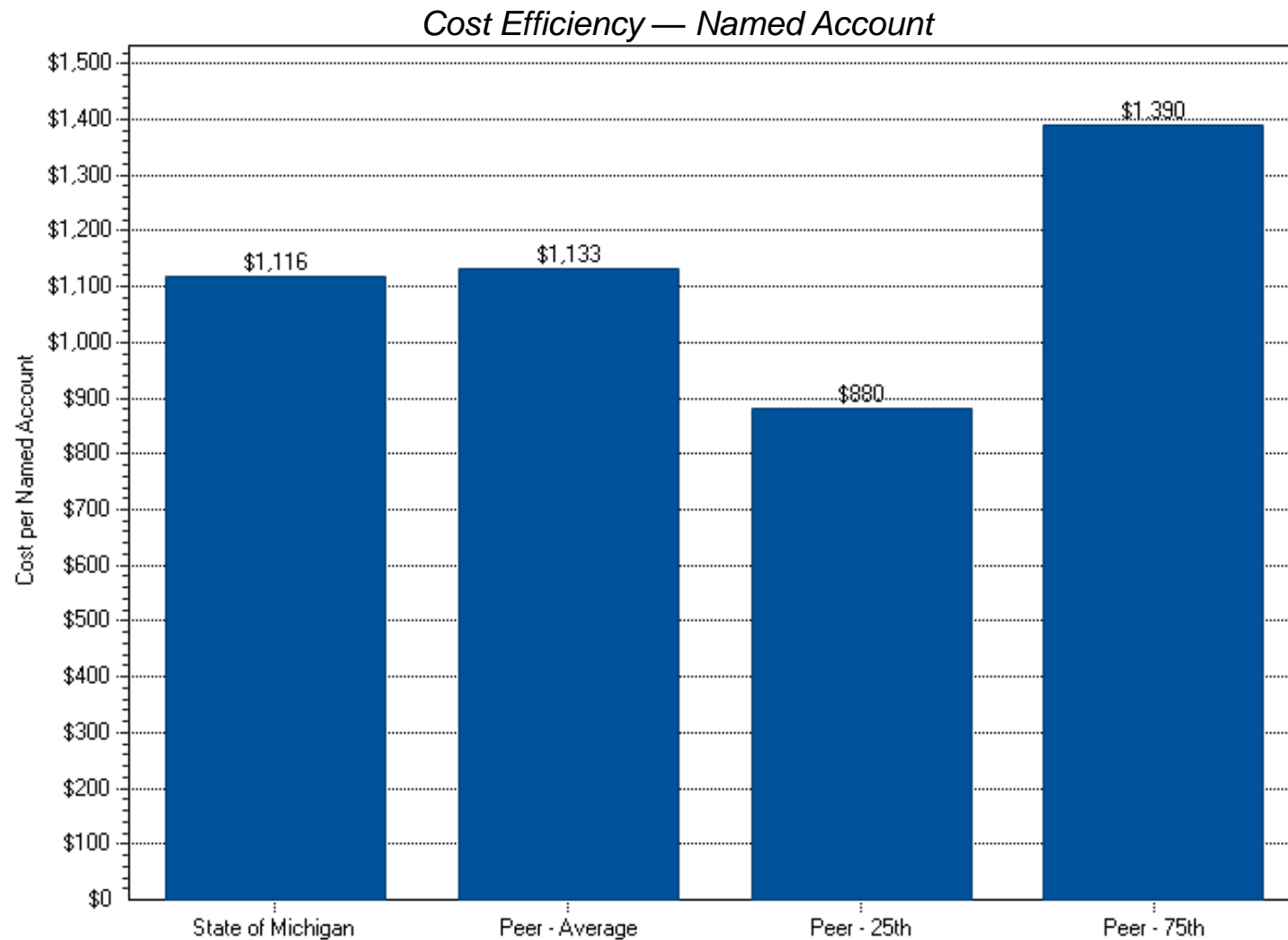
*Spend by Cost Category*



	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
Personnel	\$473	\$468	\$363	\$574
Software	\$292	\$306	\$238	\$375
Occupancy	\$17	\$19	\$15	\$24

# Applications SAP Public Sector Collection & Distribution

## Cost Efficiency

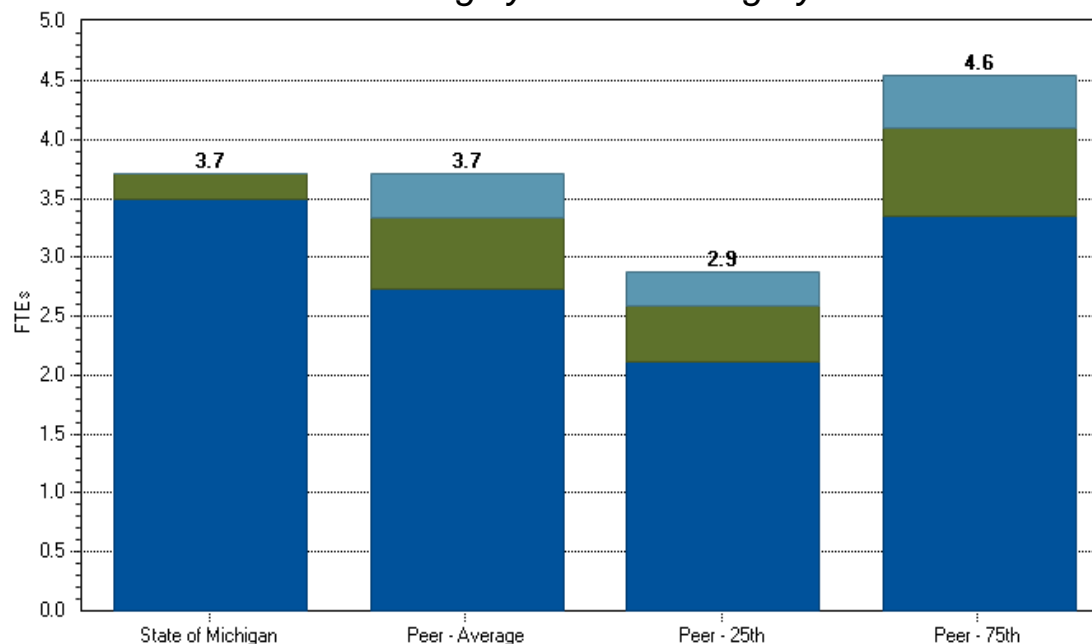


# Applications SAP Public Sector Collection & Distribution

## Staffing by Source Category

- State of Michigan IT Staff at 3.7 FTEs aligns with the peer average
- State of Michigan staff augmentation in support is low while a significant number of contractors were involved with a major SAP upgrade

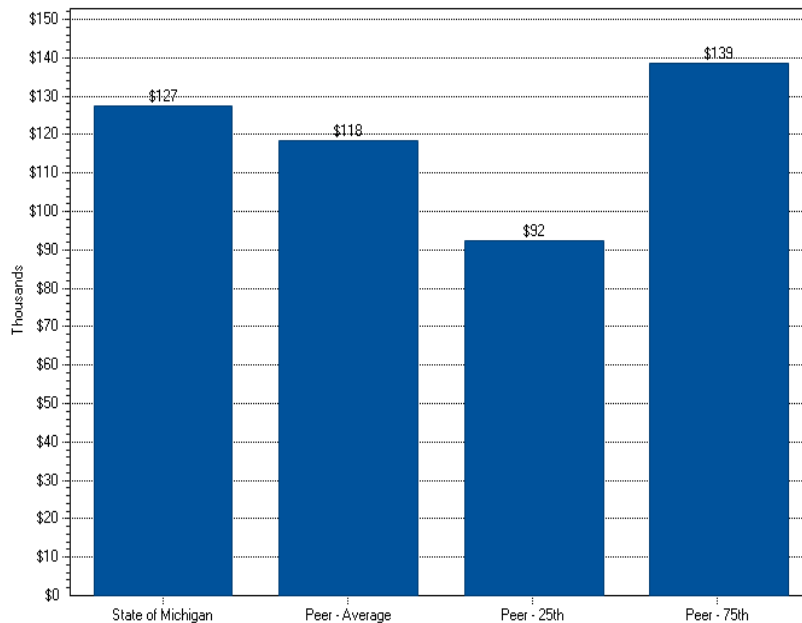
Staffing by Source Category



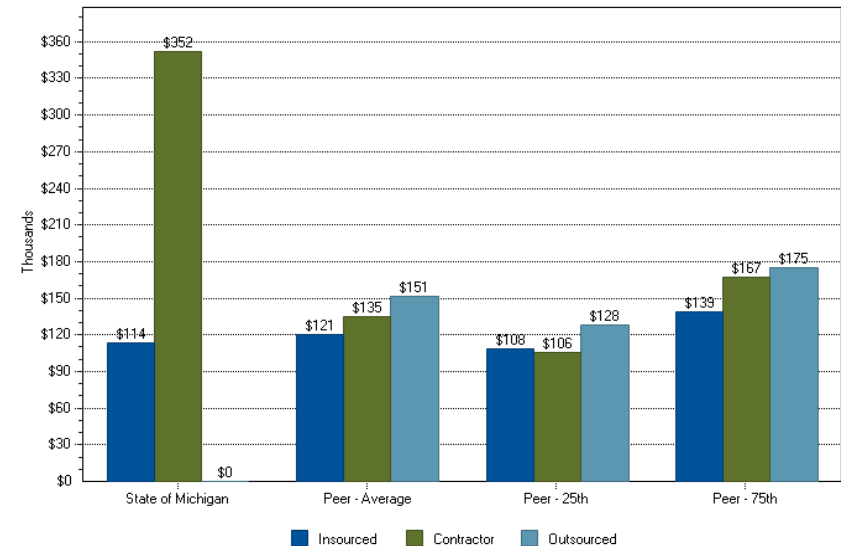
	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
■ Insourced	3.5	2.7	2.1	3.3
■ Contractor	0.2	0.6	0.5	0.7
■ Outsource	0.0	0.4	0.3	0.5

# Application SAP Public Sector Collection & Distribution Staffing

## Blended Cost per FTE



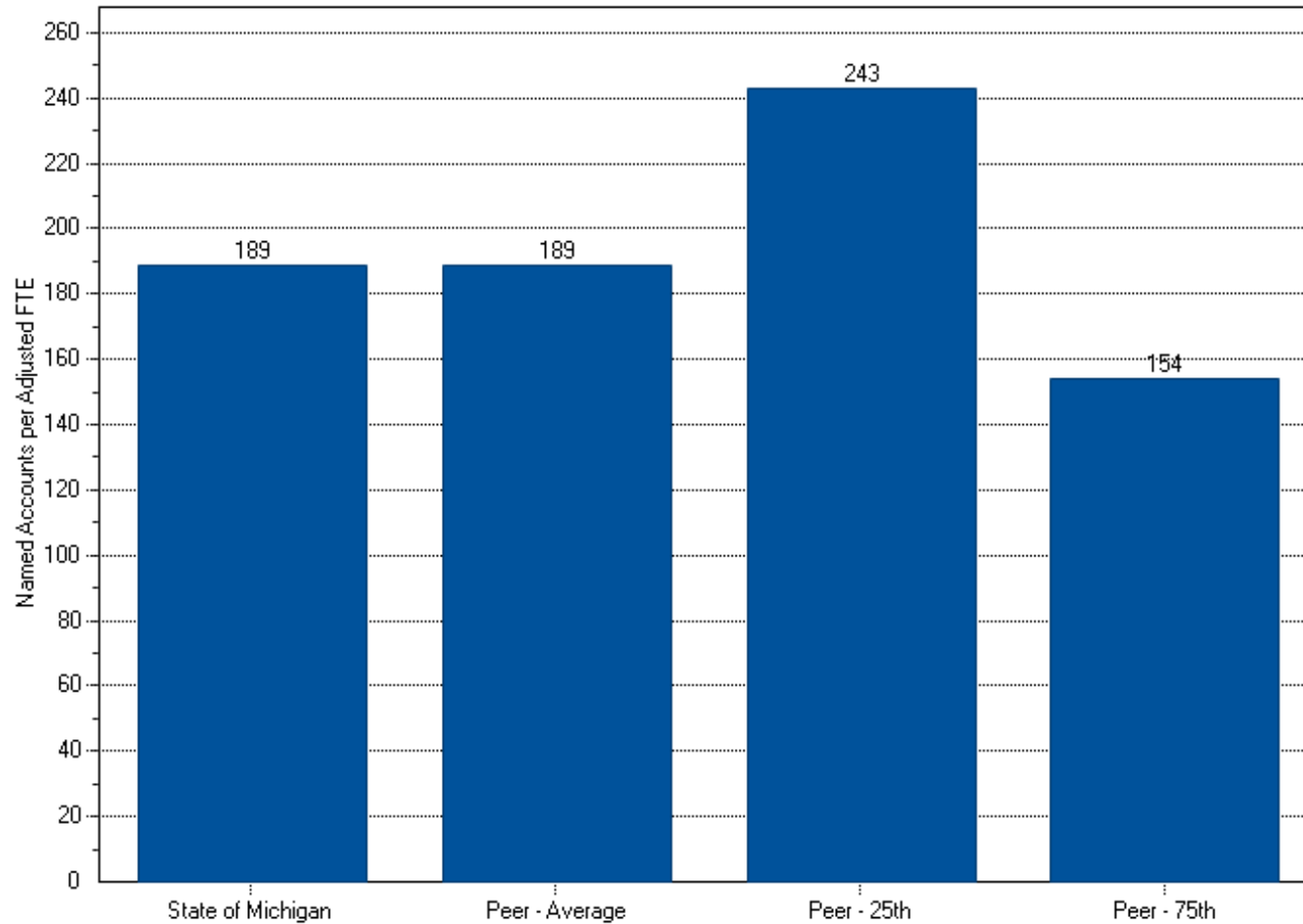
## Cost per FTE — insourced, Contractor and Outsource



# Application SAP Public Sector Collection & Distribution

## Productivity

*Productivity — Named Account per FTE*



## Analysis by Area

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Lawson HRMN Applications Support

# Lawson HRMN Applications Support

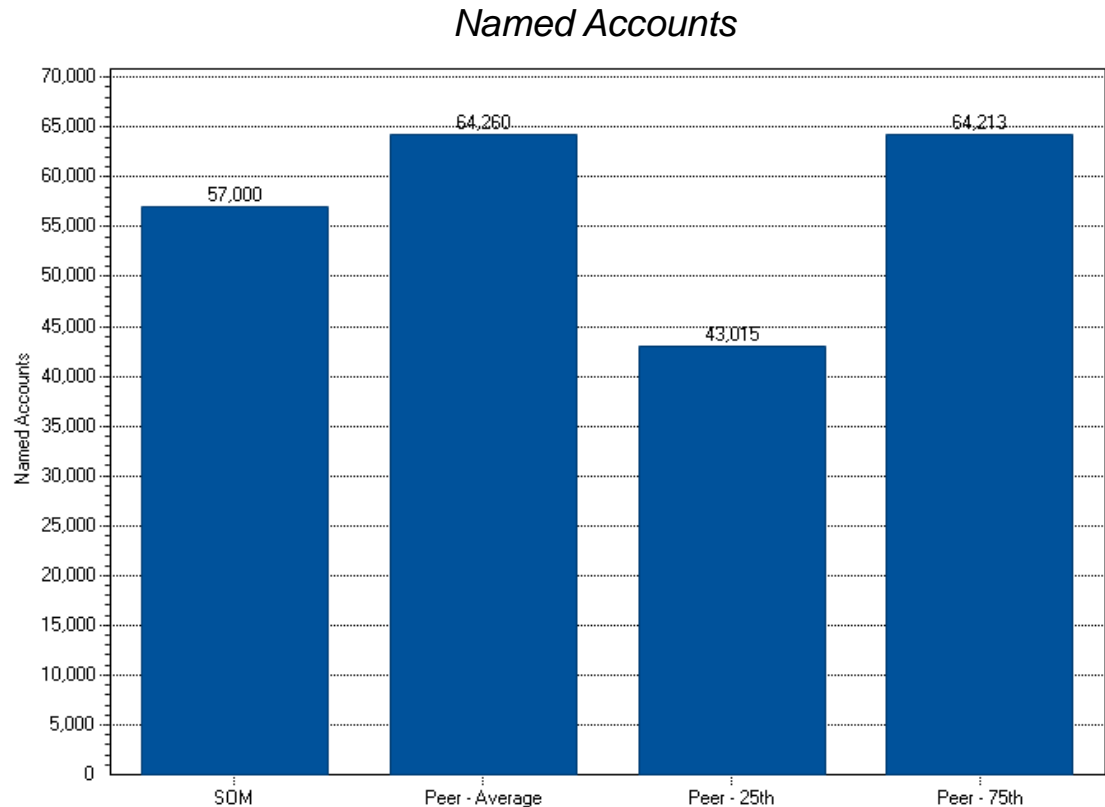
## Peer Demographics

### ■ State of Michigan

- Named Accounts  
57,000
- HRMN indicates a medium amount package customization

### ■ Peer Demographics

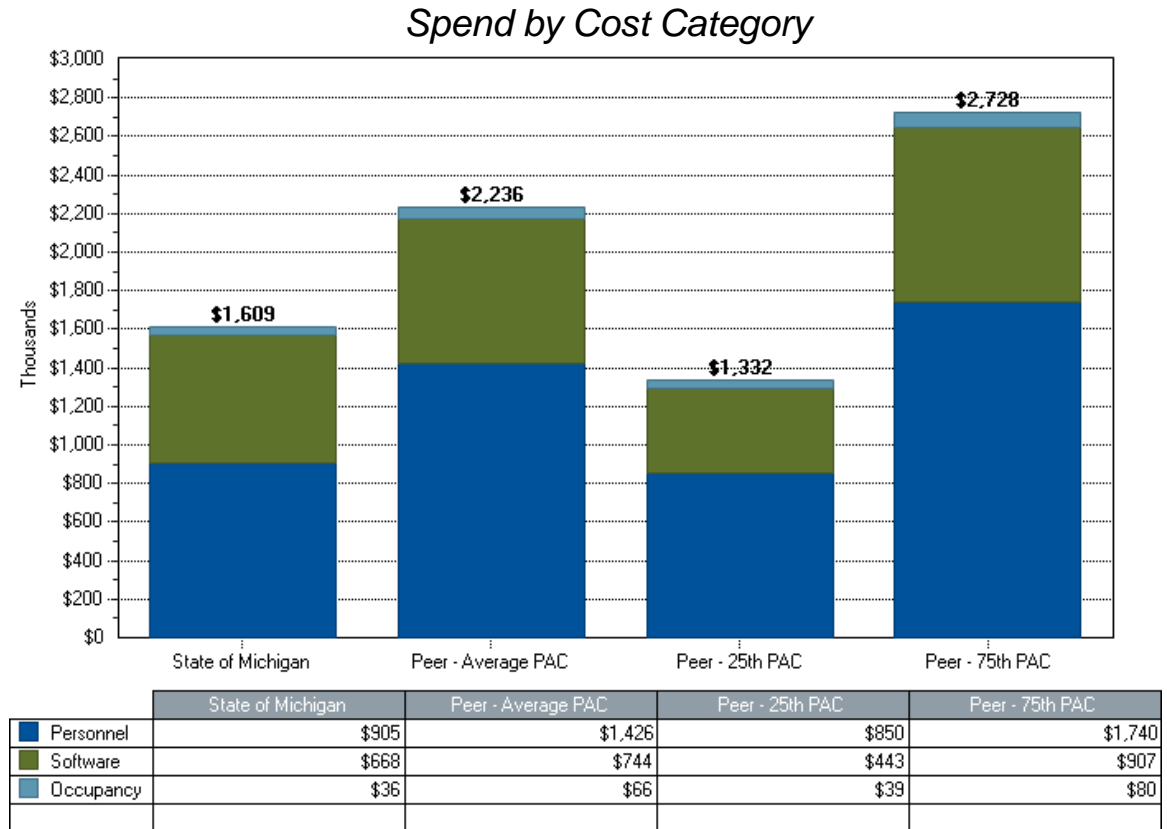
- Named Accounts  
64,260
- 6 Organizations
  - 1 Publishing, 1 Aerospace, 1 Manufacturing, Communications 1 Bank and 2 Education



# Lawson HRMN Applications Support

## Spend by Cost Category

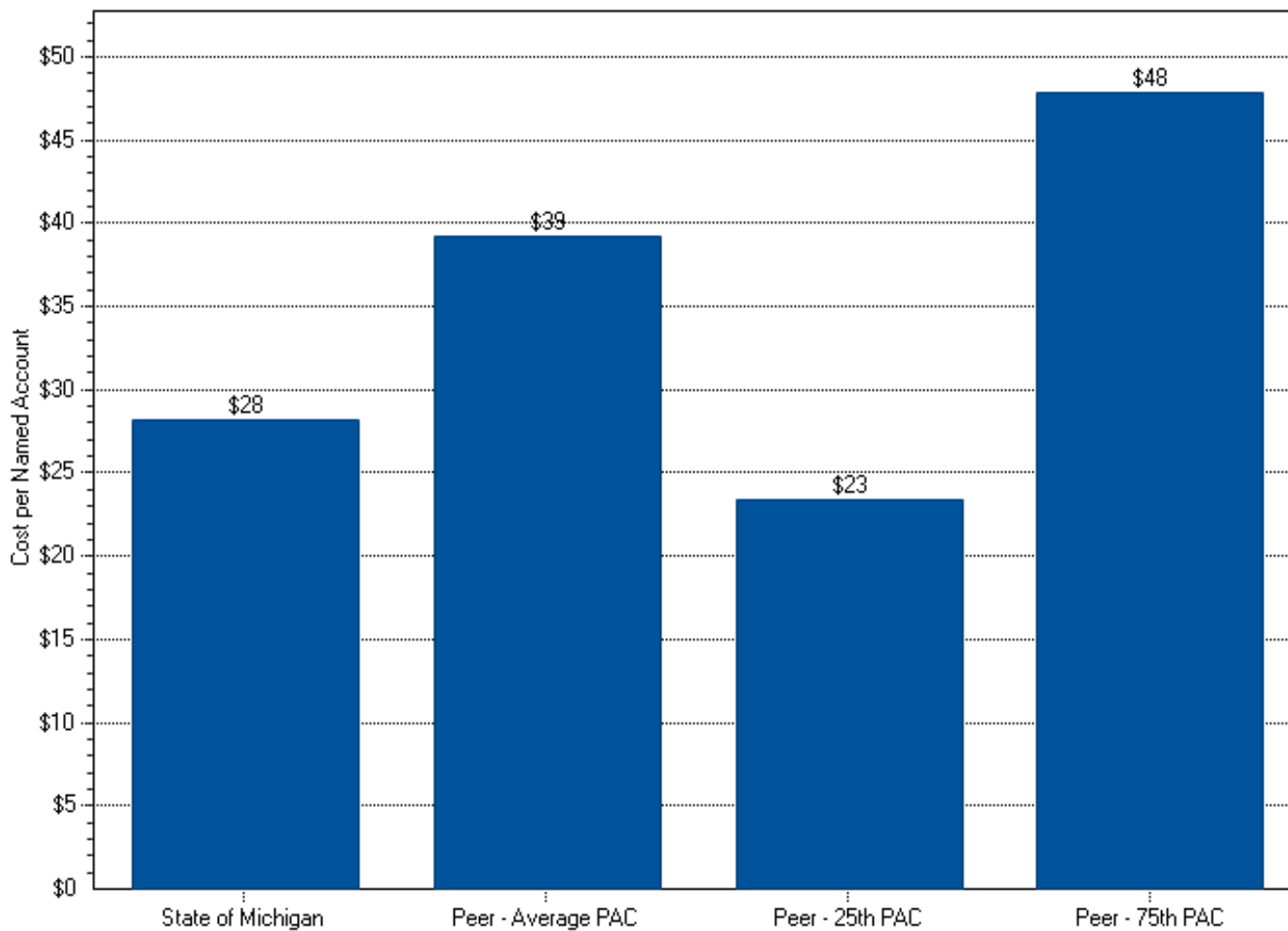
- State of Michigan IT spend at \$1.6M includes software vendor package software only and facility costs
- IT spend excludes hardware cost and software cost for tools and DBMs (SOM only)
- State of Michigan IT spend for Lawson HRMN aligns with the peer 25<sup>th</sup> percentile



# Lawson HRMN Applications Support

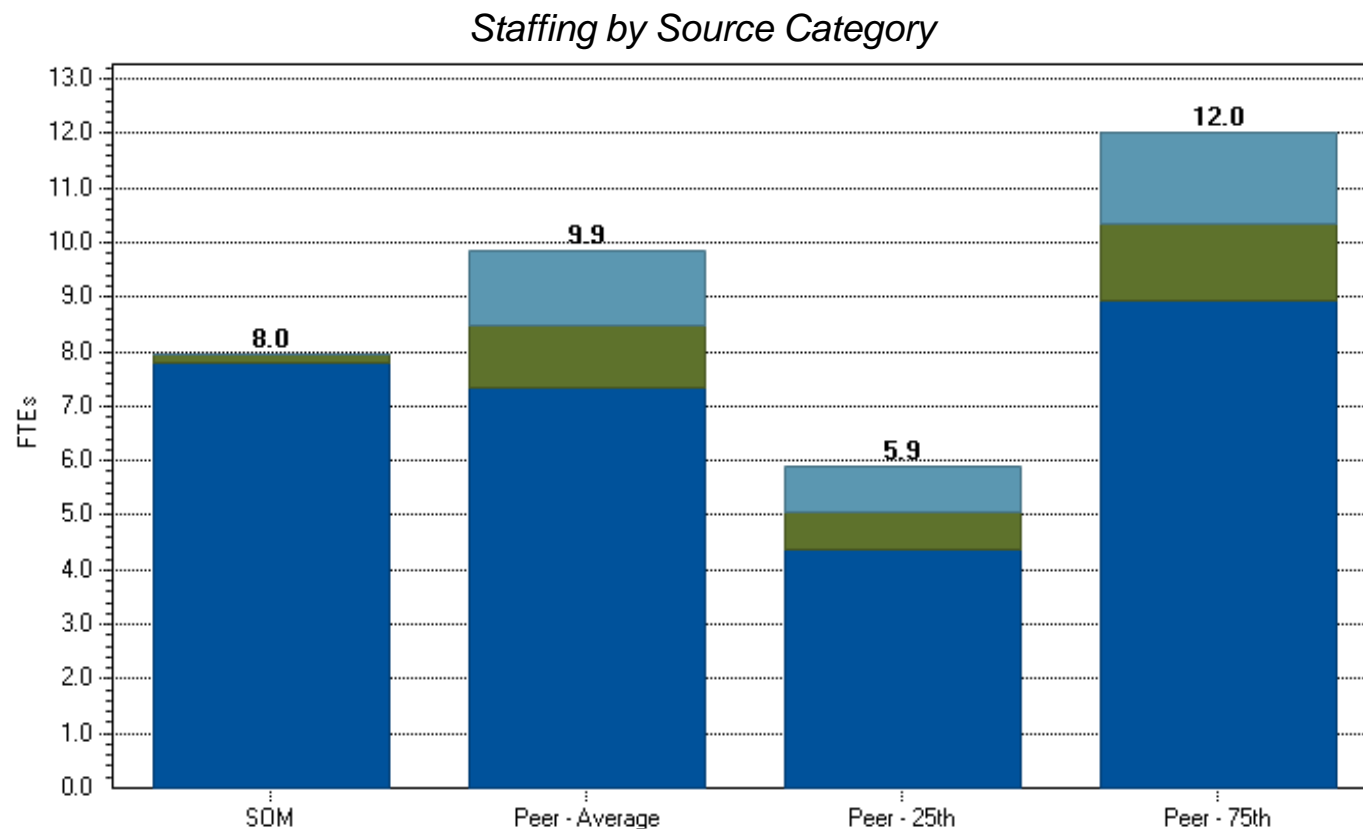
## Cost Efficiency

*Cost Efficiency — Named Account*



# Lawson HRMN Applications Support

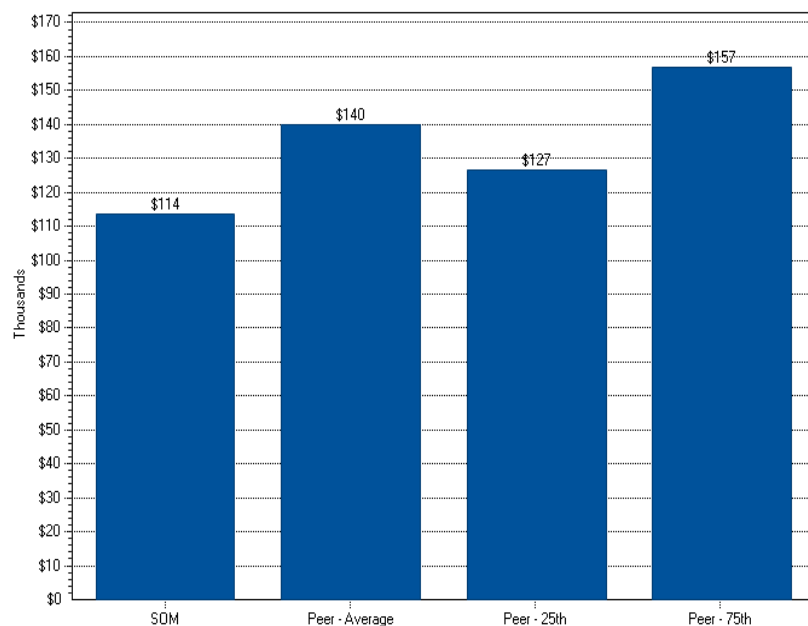
## Staffing by Source Category



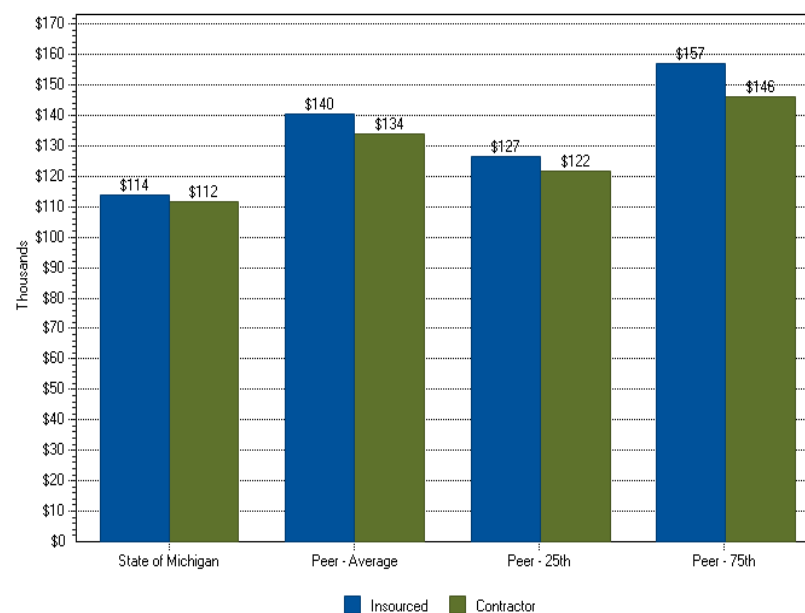
	SOM	Peer - Average	Peer - 25th	Peer - 75th
Insourced	7.8	7.3	4.4	8.9
Contractor	0.2	1.1	0.7	1.4
Outsourced	0.0	1.4	0.8	1.7

# Lawson HRMN Applications Support Staffing

## Blended Cost per FTE



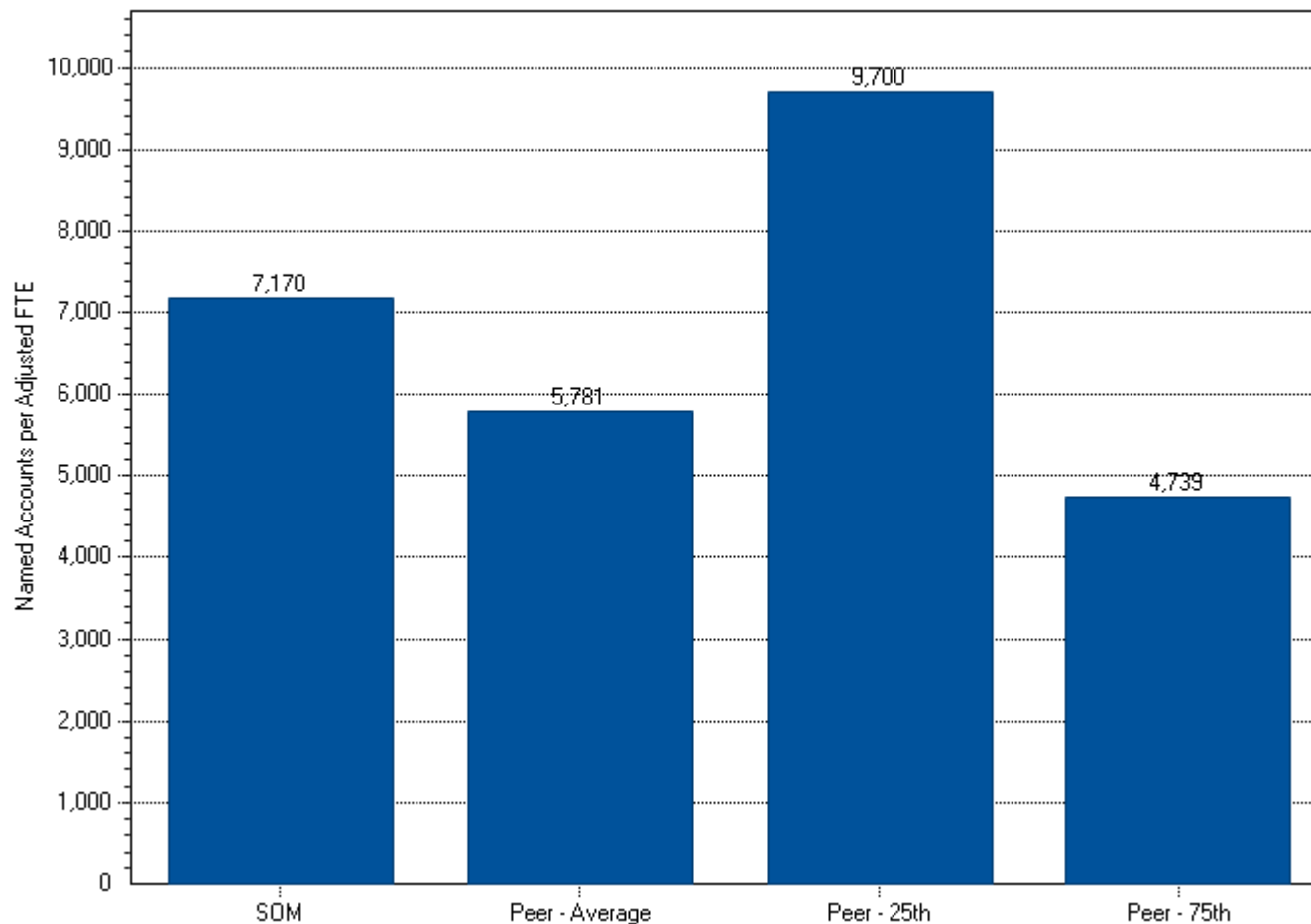
## Cost per FTE — insourced, Contractor and Outsource



# Lawson HRMN Applications Support

## Productivity

*Productivity — Named Account per FTE*



## Analysis by Area

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ORACLE e-Business Suite (LASR) Applications Support

# ORACLE e-Business Suite (LASR) Applications Support

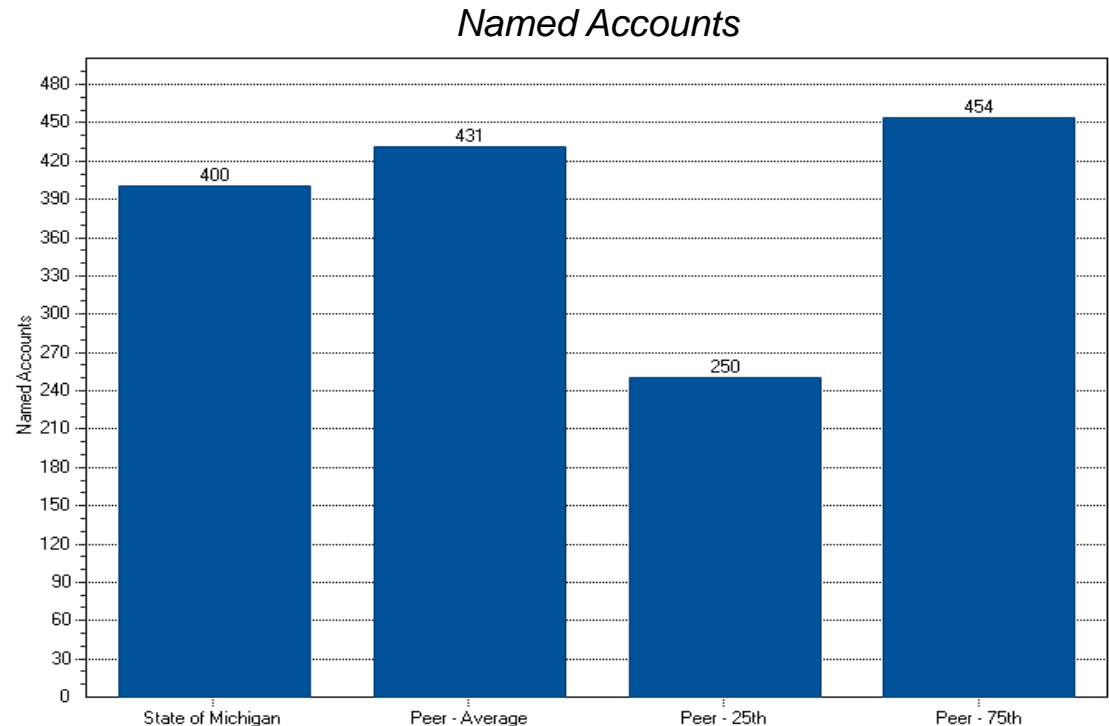
## Peer Demographics

### ■ State of Michigan

- Named Accounts 400
- ORACLE e-Business Suite with high amount package customization

### ■ Peer Demographics

- Named Accounts 473
- Peer members indicate either a high or very high amount of customization
- 4 Organizations and 1 State
  - 2 Retail, 1 Research and 1 Financial Services

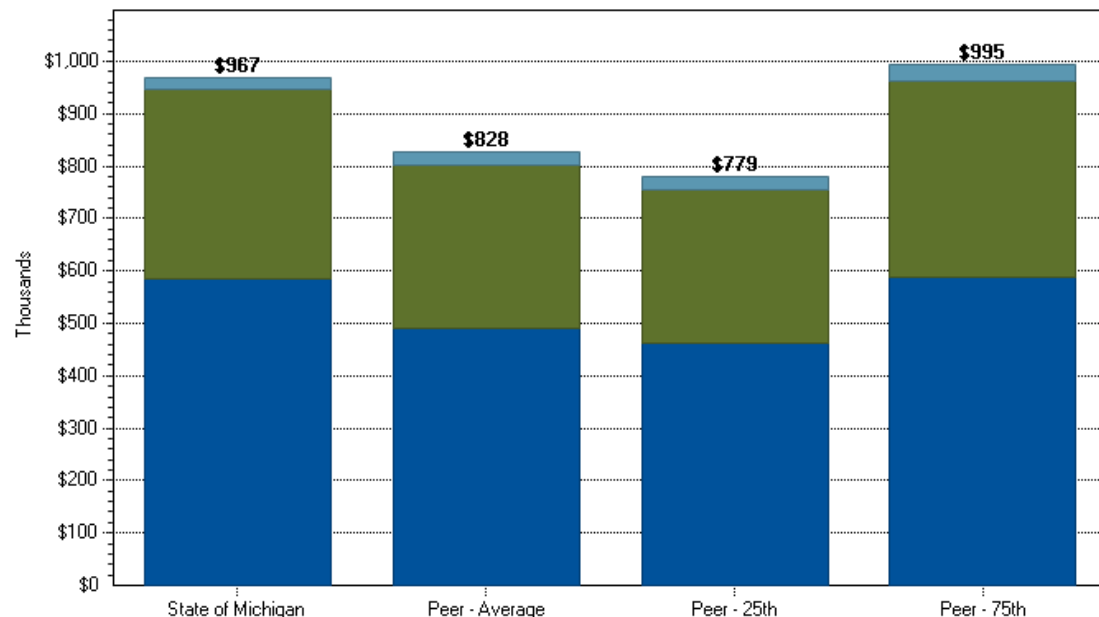


# ORACLE e-Business Suite Applications Support

## Spend by Cost Category

- State of Michigan IT spend at \$967K includes software vendor package software only and facility costs
- IT spend excludes hardware cost and software cost for tools and DBMs (SOM only)
- State of Michigan IT spend for Lawson HRMN aligns with the peer 75<sup>th</sup> percentile

*Spend by Cost Category*

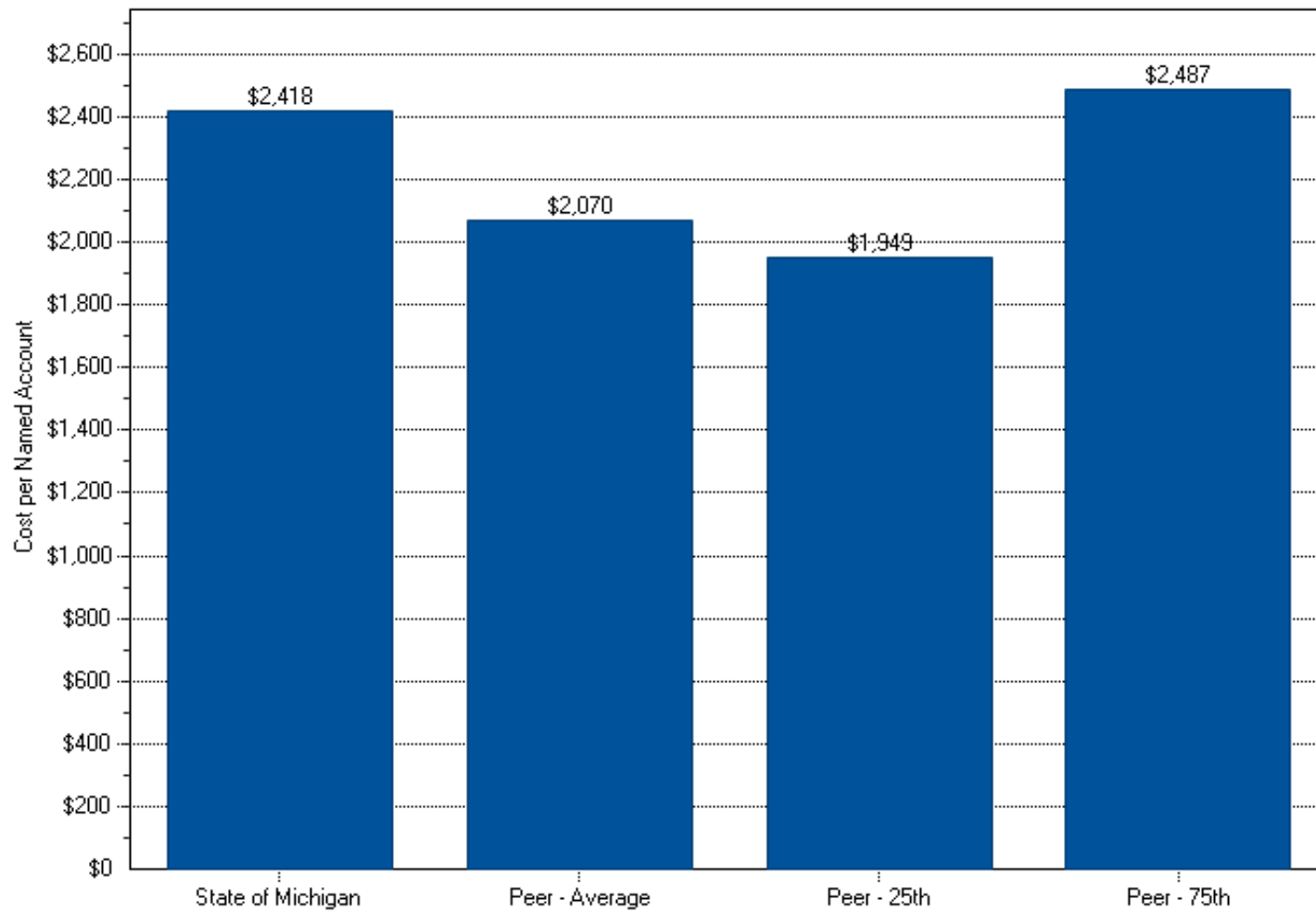


	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
Personnel	\$585	\$491	\$462	\$589
Software	\$362	\$310	\$292	\$373
Occupancy	\$20	\$27	\$26	\$33

# ORACLE e-Business Suite Applications Support

## Cost Efficiency

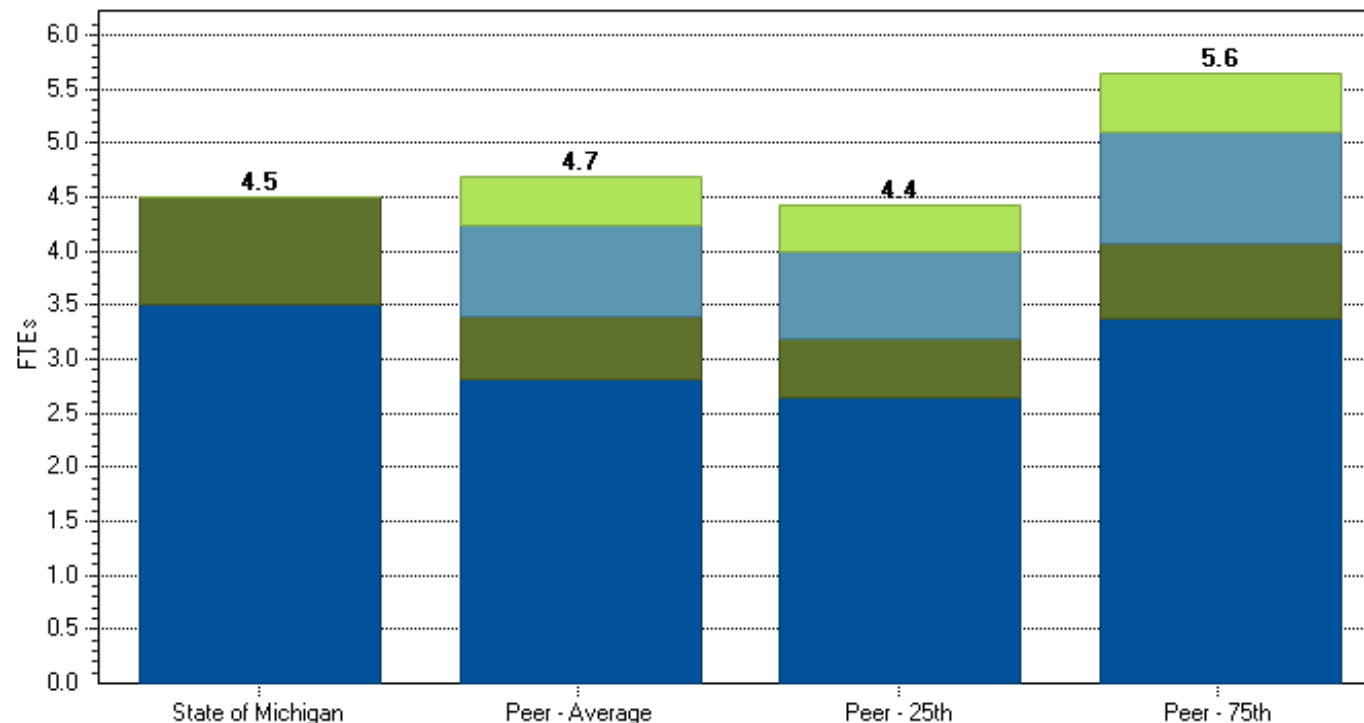
*Cost Efficiency — Named Account*



# ORACLE e-Business Suite Applications Support

## Staffing by Source Category

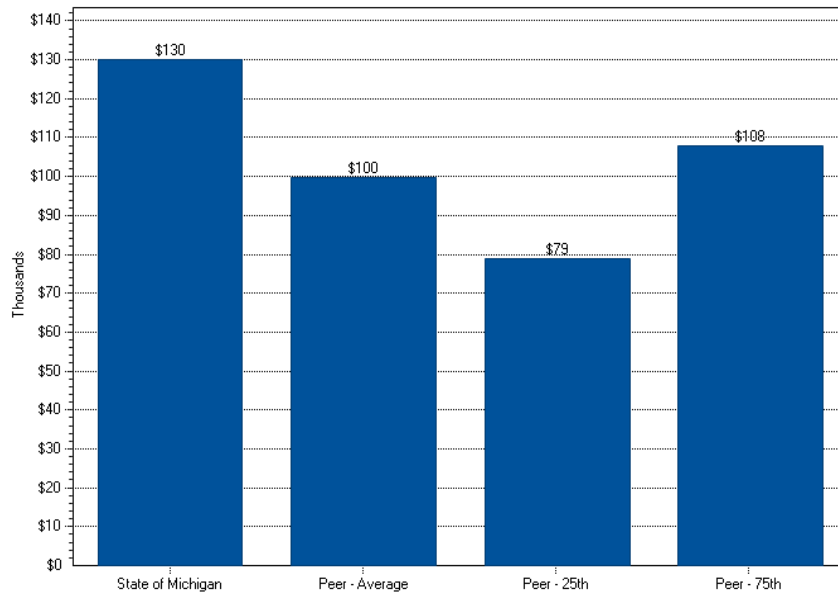
*Staffing by Source Category*



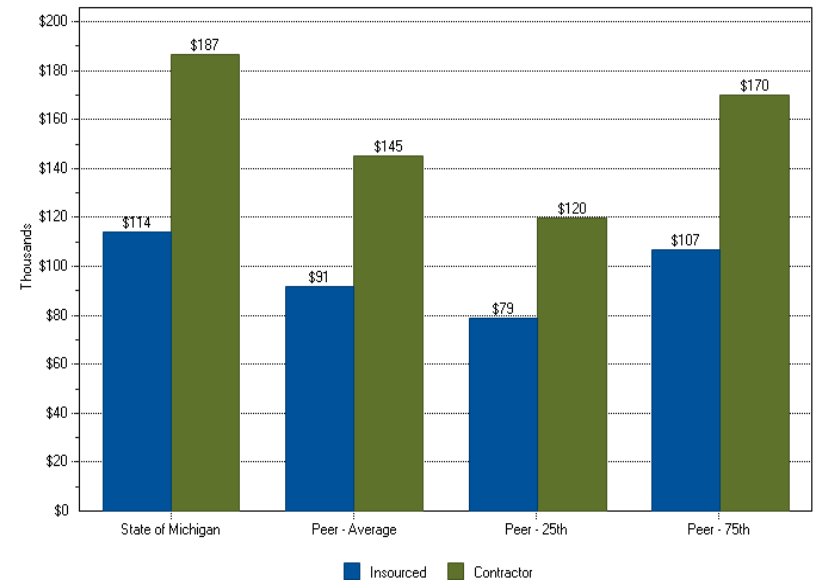
	State of Michigan	Peer - Average	Peer - 25th	Peer - 75th
Insourced	3.5	2.8	2.6	3.4
Contractor	1.0	0.6	0.5	0.7
Outsourced	0.0	0.9	0.8	1.0
Maintenance Equivalent	0.0	0.5	0.4	0.5

# ORACLE e-Business Suite Applications Support Staffing

## Blended Cost per FTE



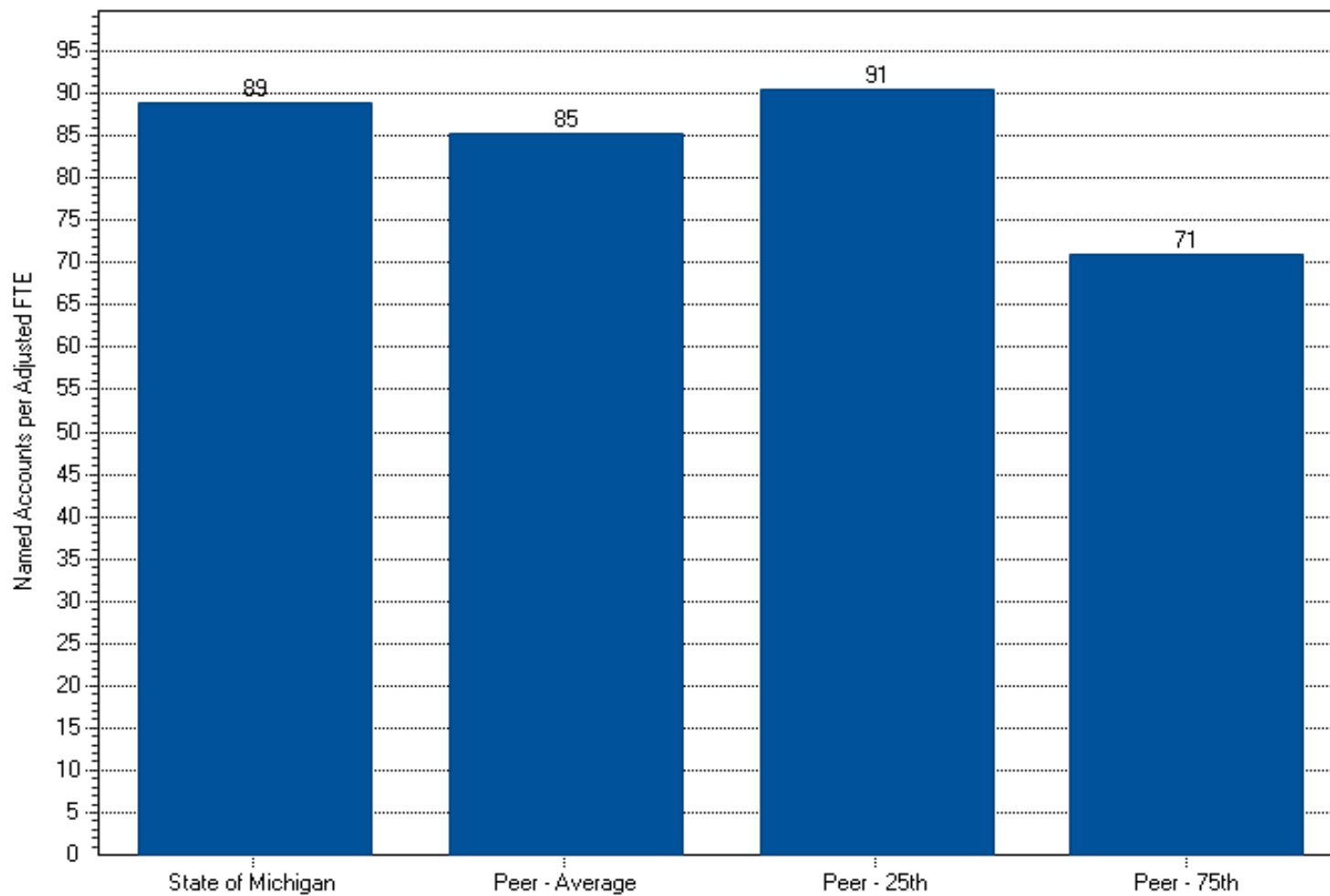
## Cost per FTE — insourced, Contractor and Outsource



# ORACLE e-Business Suite Applications Support

## Productivity

*Productivity — Named Account per FTE*



## Appendix

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# Non-ERP Application Metrics Applications Support

## General Metrics (1 of 2)

Agency	Application Name	Type	Total Cost	Package Cost	Outsourcer Cost	Function Points During Year	Cost per FP	Function Points per FTE Programmer/Analyst	FTE During Year	FTE - Insource	FTE - Contractor	FTE - Outsourced
AG	Legal Files	Vendor Package	\$170,386	\$139,540	\$0	3,827	\$45	19,135	0.20	0.20	0.00	0.00
AG	Filler AG		\$14,276	\$6,564	\$0	166	\$86	3,320	0.05	0.05	0.00	0.00
DCH	Electronic Death Registry System	In-house	\$320,198	\$0	\$0	4,963	\$65	1,723	2.88	1.44	1.44	0.00
DCH	Birth Registry System	In-house	\$119,827	\$0	\$0	3,504	\$34	3,244	1.08	0.53	0.55	0.00
DCH	Certificate of Need - E-Serv	In-house	\$23,476	\$0	\$0	7,533	\$3	39,647	0.19	0.19	0.00	0.00
DCH	Michigan Disease Surveillance System (MDSS)	Outsource	\$145,732	\$0	\$145,635	5,259	\$28	525,900	0.01	0.00	0.00	0.01
DCH	Starlims	Vendor Package	\$77,236	\$76,000	\$0	6,001	\$13	600,100	0.01	0.01	0.00	0.00
DCH	MIWIC	Vendor Package	\$502,063	\$460,053	\$0	11,916	\$42	35,047	0.34	0.34	0.00	0.00
DCH	CHAMPS	Outsource & Vendor	\$8,371,102	\$0	\$7,600,417	21,668	\$386	352	61.55	1.55	0.00	60.00
DCH	Cost Settlement	Outsource	\$1,039,772	\$0	\$968,496	24,612	\$42	3,501	7.03	0.03	0.00	7.00
DCH	Filler DCH		\$15,821,411	\$7,600,417	\$5,961,967	127,558	\$124	3,186	40.03	12.91	4.51	22.61
DCSC	Fleet Commander Motor Pool Management System	Vendor Package	\$182,953	\$15,000	\$0	3,306	\$55	4,133	0.80	0.80	0.00	0.00
DCSC	MAIN (Mainframe)	Outsource	\$5,424,734	\$0	\$3,542,232	29,213	\$186	3,242	9.01	8.00	1.00	0.01
DCSC	MAIN (Web components: C&PE and ETP)	Outsource	\$1,096,994	\$0	\$581,095	5,116	\$214	2,038	2.51	1.25	1.25	0.01
DCSC	DCDS (Data Collection and Distribution System)	In-house	\$1,550,765	\$0	\$0	1,974	\$786	263	7.50	4.50	3.00	0.00
DCSC	DCDS (MI-TES)	In-house	\$1,550,765	\$0	\$0	1,974	\$786	263	7.50	4.50	3.00	0.00
DCSC	Vision ORS (Clarety)	In-house	\$2,220,569	\$0	\$0	8,848	\$251	819	10.80	4.90	5.90	0.00
DCSC	Filler CSC		\$3,338,035	\$387,478	\$127,604	13,997	\$238	1,005	13.93	5.50	8.10	0.33
DEQ	Storage Tank Information Database (SID)	In-house	\$154,258	\$0	\$0	6,342	\$24	10,397	0.61	0.61	0.00	0.00
DEQ	MI Air Compliance and Enforcement System (MACES)	In-house	\$141,614	\$0	\$0	1,924	\$74	3,436	0.56	0.56	0.00	0.00
DEQ	Welllogic	Outsource	\$148,730	\$0	\$30,000	1,671	\$89	3,385	0.49	0.44	0.00	0.05
DEQ	Filler DEQ	Outsource	\$896,417	\$0	\$436,376	20,415	\$44	9,404	2.17	1.39	0.00	0.78
DHS	Bridges	In-house	\$10,614,700	\$0	\$0	250,000	\$42	6,579	38.00	16.00	22.00	0.00
DHS	CDC/Billing	In-house	\$462,695	\$0	\$0	931	\$497	466	2.00	2.00	0.00	0.00
DHS	CDC/IVR	Outsource	\$428,006	\$0	\$193,125	418	\$1,024	209	2.00	0.00	0.00	2.00
DHS	Family Self Sufficient Plan	In-house	\$462,695	\$0	\$0	1,005	\$460	503	2.00	2.00	0.00	0.00
DHS	MICSES	In-house	\$5,870,241	\$0	\$0	6,919	\$848	346	20.00	5.00	15.00	0.00
DHS	Filler DHS		\$42,959,831	\$3,131,960	\$14,160,746	643,064	\$67	6,420	100.17	68.50	31.00	0.67
DNR	Retail Sales System (RSS)	Outsource	\$887,038	\$0	\$772,660	5,259	\$169	2,721	1.93	0.00	0.00	1.93
DNR	Land Ownership Tracking System (LOTS)	In-house	\$51,927	\$0	\$0	5,601	\$9	18,670	0.30	0.30	0.00	0.00
DNR	Vegetative Management System (VMS)	In-house	\$36,349	\$0	\$0	1,974	\$18	9,400	0.21	0.21	0.00	0.00
DNR	Integrated Forest Management (IFMAP)	In-house	\$34,618	\$0	\$0	10,215	\$3	51,075	0.20	0.20	0.00	0.00
DNR	Filler DNR	Outsource	\$1,101,009	\$0	\$70,999	24,537	\$45	4,044	6.07	5.89	0.00	0.18
LARA Lan	OBSASE	In-house	\$153,841	\$0	\$0	7,560	\$20	7,560	1.00	1.00	0.00	0.00
LARA Lan	FAIS	In-house	\$203,924	\$0	\$0	2,466	\$83	1,973	1.25	1.00	0.25	0.00
LARA Lan	Workers Compensation System (WORCS)	In-house	\$508,015	\$0	\$0	8,178	\$62	2,726	3.00	2.00	1.00	0.00
LARA Lan	Corporations System (CORPS)	In-house	\$508,015	\$0	\$0	4,142	\$123	1,381	3.00	2.00	1.00	0.00
LARA Lan	MLCC Liquor Licensing & Enforcement System	In-house	\$192,301	\$0	\$0	4,142	\$46	3,314	1.25	1.25	0.00	0.00
LARA Lan	My License	Vendor Package	\$377,681	\$70,000	\$0	3,524	\$107	1,762	2.00	2.00	0.00	0.00
LARA Lan	Filler LARA		\$6,091,435	\$1,886,800	\$0	66,167	\$92	2,497	26.50	23.75	2.75	0.00
LOTT	Filler Lottery		\$203,352	\$0	\$0	1,628	\$125	1,480	1.10	1.10	0.00	0.00

# Non-ERP Application Metrics Applications Support

## General Metrics (2 of 2)

Agency	Application Name	Type	Total Cost	Package Cost	Outsourcer Cost	Function Points During Year	Cost per FP	Function Points per FTE Programmer/Analyst	FTE During Year	FTE - Insource	FTE - Contractor	FTE - Outsourced
MDAR	USAHerds	Vendor Package	\$118,003	\$24,000	\$0	13,485	\$9	31,360	0.43	0.43	0.00	0.00
MDAR	EWARS	Outsource	\$115,381	\$0	\$81,730	1,671	\$69	6,524	0.26	0.06	0.00	0.20
MDAR	Filler MDARD		\$133,353	\$0	\$0	8,490	\$16	13,918	0.61	0.61	0.00	0.00
MDE	State Aid Management System (SAMS)	In-house	\$247,496	\$0	\$0	1,895	\$131	1,354	1.40	1.40	0.00	0.00
MDE	Item Bank System	In-house	\$781,543	\$0	\$0	1,504	\$520	301	5.00	3.00	1.00	1.00
MDE	CEPI - MSDS (Michigan Student Data System)	In-house	\$988,644	\$0	\$0	27,639	\$36	4,980	5.55	4.90	0.65	0.00
MDE	Filler MDE		\$3,404,212	\$377,246	\$884,999	53,096	\$64	4,132	12.85	10.50	1.10	1.25
MDOC	Corrections Management Information System (CMIS)	In-house	\$75,738	\$0	\$0	6,526	\$12	13,318	0.49	0.49	0.00	0.00
MDOC	OMNI	In-house	\$784,538	\$0	\$0	11,596	\$68	2,401	4.83	3.13	1.70	0.00
MDOC	NextGen Electronic Medical Record and Enterprise P	Vendor Package	\$773,647	\$629,900	\$0	19,086	\$41	20,523	0.93	0.93	0.00	0.00
MDOC	COMPAS	Vendor Package	\$712,365	\$700,000	\$0	1,522	\$468	19,025	0.08	0.08	0.00	0.00
MDOC	Filler DOC	Vendor Package	\$752,739	\$0	\$0	12,111	\$62	2,487	4.87	4.87	0.00	0.00
MDOS	Branch Office System (BOS)	In-house	\$100,871	\$0	\$0	3,032	\$33	5,513	0.55	0.55	0.00	0.00
MDOS	BOS (Driver/Vehicle MF backend)	In-house	\$1,024,565	\$0	\$0	5,735	\$179	1,434	4.00	2.60	1.40	0.00
MDOS	Qualified Voter File (QVF)	Outsource	\$412,108	\$0	\$90,045	3,524	\$117	2,349	1.50	0.50	0.50	0.50
MDOS	Uniform Commercial Code (UCC) Backend	In-house	\$73,361	\$0	\$0	1,974	\$37	4,935	0.40	0.40	0.00	0.00
MDOS	UCC Online	In-house	\$73,361	\$0	\$0	1,005	\$73	2,513	0.40	0.40	0.00	0.00
MDOS	Branch Revenue (BR)	In-house	\$64,191	\$0	\$0	1,121	\$57	3,203	0.35	0.35	0.00	0.00
MDOS	Filler MDOS		\$336,115	\$0	\$0	3,151	\$107	1,741	1.81	1.79	0.02	0.00
MDOT	Field Manager	Vendor Package	\$315,398	\$0	\$0	5,159	\$61	2,468	2.09	2.09	0.00	0.00
MDOT	FileNet	Vendor Package	\$78,472	\$0	\$0	4,665	\$17	8,971	0.52	0.52	0.00	0.00
MDOT	MPINS	In-house	\$226,960	\$0	\$0	2,132	\$106	1,579	1.35	0.31	1.04	0.00
MDOT	LAPMS	In-house	\$66,509	\$0	\$0	834	\$80	1,986	0.42	0.28	0.14	0.00
MDOT	MBIS	In-house	\$60,363	\$0	\$0	834	\$72	2,085	0.40	0.40	0.00	0.00
MDOT	MBRS	In-house	\$60,363	\$0	\$0	834	\$72	2,085	0.40	0.40	0.00	0.00
MDOT	IHAP	In-house	\$73,886	\$0	\$0	884	\$84	1,922	0.46	0.26	0.20	0.00
MDOT	CPS	In-house	\$85,234	\$0	\$0	1,974	\$43	3,589	0.55	0.45	0.10	0.00
MDOT	Filler DOT		\$7,669,792	\$2,298,775	\$0	95,428	\$80	2,865	33.31	17.90	15.41	0.00
MGCB	Filler MGCB		\$413,590	\$0	\$0	3,311	\$125	2,759	1.20	1.20	0.00	0.00
Mich.gov	Michigan.gov	In-house	\$1,198,209	\$0	\$0	3,280	\$365	469	7.00	6.00	1.00	0.00
Mich.gov	Filler Mich.gov		\$3,099,799	\$0	\$2,774,500	8,485	\$365	2,121	4.00	1.00	0.00	3.00
MSP	Criminal History Record (CHR)	In-house	\$493,330	\$0	\$0	2,565	\$192	684	3.75	2.75	1.00	0.00
MSP	Law Enforcement Information Network (LEIN)	Vendor Package	\$669,322	\$120,023	\$0	3,623	\$185	863	4.20	3.20	1.00	0.00
MSP	MI Criminal Justice Information Network (MICJIN)	Vendor Package	\$493,315	\$79,807	\$0	857	\$576	286	3.00	1.50	1.50	0.00
MSP	Filler MSP		\$2,206,092	\$1,264,413	\$148,720	9,612	\$230	1,586	6.06	4.55	1.50	0.01
TREA	ESKORT	Vendor Package	\$689,073	\$239,640	\$0	3,898	\$177	3,898	1.00	0.96	0.04	0.00
TREA	STAR (State Treasury Account Receivable)	In-house	\$681,602	\$0	\$0	15,590	\$44	10,257	1.52	1.52	0.00	0.00
TREA	Filler Treasury		\$5,981,518	\$2,024,280	\$0	85,044	\$70	9,708	8.76	7.61	1.15	0.00
LARA Det UIA CR	Michigan Adult Education Reporting System (MAERS)	In-house	\$229,915	\$0	\$0	884	\$260	570	1.55	0.50	1.05	0.00
LARA Det UIA CR	WorkForce Informer Labor Market Information Website	Vendor Package	\$143,915	\$17,149	\$0	1,947	\$74	1,947	1.00	1.00	0.00	0.00
LARA Det UIA CR	MDCR Contact Management System (CMS)	In-house	\$253,533	\$0	\$0	3,325	\$76	1,663	2.00	2.00	0.00	0.00
LARA Det UIA CR	UIA TAX Processing Application	In-house	\$602,284	\$0	\$0	10,369	\$58	2,304	4.50	3.50	1.00	0.00
LARA Det UIA CR	Michigan Talent Bank (MTB)	In-house	\$457,980	\$0	\$0	2,063	\$222	581	3.55	3.30	0.25	0.00
LARA Det UIA CR	One Stop Management Information System (OSMIS)	In-house	\$516,674	\$0	\$0	3,524	\$147	904	3.90	3.20	0.70	0.00
LARA Det UIA CR	Filler LARA Detroit		\$11,023,238	\$0	\$9,183,942	112,894	\$98	3,947	28.61	7.80	4.00	16.81

# Non-ERP Application Metrics Applications Support (Largest to Smallest App)

## General Metrics (1 of 2)

Agency	Application Name	Type	Total Cost	Package Cost	Outsourcer Cost	Function Points During Year	Cost per FP	Function Points per FTE Programmer/Analyst	FTE During Year	FTE - Insource	FTE - Contractor	FTE - Outsourcer
DHS	Bridges	In-house	\$10,614,700	\$0	\$0	250,000	\$42	6,579	38.00	16.00	22.00	0.00
DCSC	MAIN (Mainframe)	Outsource	\$5,424,734	\$0	\$3,542,232	29,213	\$186	3,242	9.01	8.00	1.00	0.01
MDE	CEPI - MSDS (Michigan Student Data System)	In-house	\$988,644	\$0	\$0	27,639	\$36	4,980	5.55	4.90	0.65	0.00
DCH	Cost Settlement	Outsource	\$1,039,772	\$0	\$968,496	24,612	\$42	3,501	7.03	0.03	0.00	7.00
DCH	CHAMPS	Outsource & V	\$8,371,102	\$0	\$7,600,417	21,668	\$386	352	61.55	1.55	0.00	60.00
MDOC	NextGen Electronic Medical Record and Enterprise P	Vendor Packag	\$773,647	\$629,900	\$0	19,086	\$41	20,523	0.93	0.93	0.00	0.00
TREA	STAR (State Treasury Account Receivable)	In-house	\$681,602	\$0	\$0	15,590	\$44	10,257	1.52	1.52	0.00	0.00
MDAR	USAHerds	Vendor Packag	\$118,003	\$24,000	\$0	13,485	\$9	31,360	0.43	0.43	0.00	0.00
DCH	MIWIC	Vendor Packag	\$502,063	\$460,053	\$0	11,916	\$42	35,047	0.34	0.34	0.00	0.00
MDOC	OMNI	In-house	\$784,538	\$0	\$0	11,596	\$68	2,401	4.83	3.13	1.70	0.00
LARA Det UIA CR	UIA TAX Processing Application	In-house	\$602,284	\$0	\$0	10,369	\$58	2,304	4.50	3.50	1.00	0.00
DNR	Integrated Forest Management (IFMAP)	In-house	\$34,618	\$0	\$0	10,215	\$3	51,075	0.20	0.20	0.00	0.00
DCSC	Vision ORS (Clarety)	In-house	\$2,220,569	\$0	\$0	8,848	\$251	819	10.80	4.90	5.90	0.00
LARA LAN	Workers Compensation System (WORCS)	In-house	\$508,015	\$0	\$0	8,178	\$62	2,726	3.00	2.00	1.00	0.00
LARA LAN	OBSASE	In-house	\$153,841	\$0	\$0	7,560	\$20	7,560	1.00	1.00	0.00	0.00
DCH	Certificate of Need - E-Serv	In-house	\$23,476	\$0	\$0	7,533	\$3	39,647	0.19	0.19	0.00	0.00
DHS	MiCSES	In-house	\$5,870,241	\$0	\$0	6,919	\$848	346	20.00	5.00	15.00	0.00
MDOC	Corrections Management Information System (CMIS)	In-house	\$75,738	\$0	\$0	6,526	\$12	13,318	0.49	0.49	0.00	0.00
DEQ	Storage Tank Information Database (SID)	In-house	\$154,258	\$0	\$0	6,342	\$24	10,397	0.61	0.61	0.00	0.00
DCH	Starlims	Vendor Packag	\$77,236	\$76,000	\$0	6,001	\$13	600,100	0.01	0.01	0.00	0.00
MDOS	BOS (Driver/Vehicle MF backend)	In-house	\$1,024,565	\$0	\$0	5,735	\$179	1,434	4.00	2.60	1.40	0.00
DNR	Land Ownership Tracking System (LOTS)	In-house	\$51,927	\$0	\$0	5,601	\$9	18,670	0.30	0.30	0.00	0.00
DCH	Michigan Disease Surveillance System (MDSS)	Outsource	\$145,732	\$0	\$145,635	5,259	\$28	525,900	0.01	0.00	0.00	0.01
DNR	Retail Sales System (RSS)	Outsource	\$887,038	\$0	\$772,660	5,259	\$169	2,721	1.93	0.00	0.00	1.93
MDOT	Field Manager	Vendor Packag	\$315,398	\$0	\$0	5,159	\$61	2,468	2.09	2.09	0.00	0.00
DCSC	MAIN (Web components: C&PE and ETP)	Outsource	\$1,096,994	\$0	\$581,095	5,116	\$214	2,038	2.51	1.25	1.25	0.01
DCH	Electronic Death Registry System	In-house	\$320,198	\$0	\$0	4,963	\$65	1,723	2.88	1.44	1.44	0.00
MDOT	FileNet	Vendor Packag	\$78,472	\$0	\$0	4,665	\$17	8,971	0.52	0.52	0.00	0.00
LARA LAN	Corporations System (CORPS)	In-house	\$508,015	\$0	\$0	4,142	\$123	1,381	3.00	2.00	1.00	0.00
LARA LAN	MLCC Liquor Licensing & Enforcement System	In-house	\$192,301	\$0	\$0	4,142	\$46	3,314	1.25	1.25	0.00	0.00
TREA	ESKORT	Vendor Packag	\$689,073	\$239,640	\$0	3,898	\$177	3,898	1.00	0.96	0.04	0.00
AG	Legal Files	Vendor Packag	\$170,386	\$139,540	\$0	3,827	\$45	19,135	0.20	0.20	0.00	0.00
MSP	Law Enforcement Information Network (LEIN)	Vendor Packag	\$669,322	\$120,023	\$0	3,623	\$185	863	4.20	3.20	1.00	0.00
LARA LAN	My License	Vendor Packag	\$377,681	\$70,000	\$0	3,524	\$107	1,762	2.00	2.00	0.00	0.00

# Non-ERP Application Metrics Applications Support (Largest to Smallest App)

## General Metrics (2 of 2)

Agency	Application Name	Type	Total Cost	Package Cost	Outsourcer Cost	Function Points During Year	Cost per FP	Function Points per FTE Programmer / Analyst	FTE During Year	FTE - Insource	FTE - Contractor	FTE - Outsourced
MDOS	Qualified Voter File (QVF)	Outsource	\$412,108	\$0	\$90,045	3,524	\$117	2,349	1.50	0.50	0.50	0.50
LARA Det UIA CR	One Stop Management Information System (OSMIS)	In-house	\$516,674	\$0	\$0	3,524	\$147	904	3.90	3.20	0.70	0.00
DCH	Birth Registry System	In-house	\$119,827	\$0	\$0	3,504	\$34	3,244	1.08	0.53	0.55	0.00
LARA Det UIA CR	MDCR Contact Management System (CMS)	In-house	\$253,533	\$0	\$0	3,325	\$76	1,663	2.00	2.00	0.00	0.00
DCSC	Fleet Commander Motor Pool Management System	Vendor Package	\$182,953	\$15,000	\$0	3,306	\$55	4,133	0.80	0.80	0.00	0.00
Mich.gov	Michigan.gov	In-house	\$1,198,209	\$0	\$0	3,280	\$365	469	7.00	6.00	1.00	0.00
MDOS	Branch Office System (BOS)	In-house	\$100,871	\$0	\$0	3,032	\$33	5,513	0.55	0.55	0.00	0.00
MSP	Criminal History Record (CHR)	In-house	\$493,330	\$0	\$0	2,565	\$192	684	3.75	2.75	1.00	0.00
LARA LAN	FAIS	In-house	\$203,924	\$0	\$0	2,466	\$83	1,973	1.25	1.00	0.25	0.00
MDOT	MPINS	In-house	\$226,960	\$0	\$0	2,132	\$106	1,579	1.35	0.31	1.04	0.00
LARA Det UIA CR	Michigan Talent Bank (MTB)	In-house	\$457,980	\$0	\$0	2,063	\$222	581	3.55	3.30	0.25	0.00
DCSC	DCDS (Data Collection and Distribution System)	In-house	\$1,550,765	\$0	\$0	1,974	\$786	263	7.50	4.50	3.00	0.00
DCSC	DCDS (MI-TES)	In-house	\$1,550,765	\$0	\$0	1,974	\$786	263	7.50	4.50	3.00	0.00
DNR	Vegetative Management System (VMS)	In-house	\$36,349	\$0	\$0	1,974	\$18	9,400	0.21	0.21	0.00	0.00
MDOS	Uniform Commercial Code (UCC) Backend	In-house	\$73,361	\$0	\$0	1,974	\$37	4,935	0.40	0.40	0.00	0.00
MDOT	CPS	In-house	\$85,234	\$0	\$0	1,974	\$43	3,589	0.55	0.45	0.10	0.00
LARA Det UIA CR	WorkForce Informer Labor Market Information Website	Vendor Package	\$143,915	\$17,149	\$0	1,947	\$74	1,947	1.00	1.00	0.00	0.00
DEQ	MI Air Compliance and Enforcement System (MACES)	In-house	\$141,614	\$0	\$0	1,924	\$74	3,436	0.56	0.56	0.00	0.00
MDE	State Aid Management System (SAMS)	In-house	\$247,496	\$0	\$0	1,895	\$131	1,354	1.40	1.40	0.00	0.00
DEQ	Wellogic	Outsource	\$148,730	\$0	\$30,000	1,671	\$89	3,385	0.49	0.44	0.00	0.05
MDAR	EWARS	Outsource	\$115,381	\$0	\$81,730	1,671	\$69	6,524	0.26	0.06	0.00	0.20
MDOC	COMPAS	Vendor Package	\$712,365	\$700,000	\$0	1,522	\$468	19,025	0.08	0.08	0.00	0.00
MDE	Item Bank System	In-house	\$781,543	\$0	\$0	1,504	\$520	301	5.00	3.00	1.00	1.00
MDOS	Branch Revenue (BR)	In-house	\$64,191	\$0	\$0	1,121	\$57	3,203	0.35	0.35	0.00	0.00
DHS	Family Self Sufficient Plan	In-house	\$462,695	\$0	\$0	1,005	\$460	503	2.00	2.00	0.00	0.00
MDOS	UCC Online	In-house	\$73,361	\$0	\$0	1,005	\$73	2,513	0.40	0.40	0.00	0.00
DHS	CDC/Billing	In-house	\$462,695	\$0	\$0	931	\$497	466	2.00	2.00	0.00	0.00
MDOT	IHAP	In-house	\$73,886	\$0	\$0	884	\$84	1,922	0.46	0.26	0.20	0.00
LARA Det UIA CR	Michigan Adult Education Reporting System (MAERS)	In-house	\$229,915	\$0	\$0	884	\$260	570	1.55	0.50	1.05	0.00
MSP	MI Criminal Justice Information Network (MiCJIN)	Vendor Package	\$493,315	\$79,807	\$0	857	\$576	286	3.00	1.50	1.50	0.00
MDOT	LAPMS	In-house	\$66,509	\$0	\$0	834	\$80	1,986	0.42	0.28	0.14	0.00
MDOT	MBIS	In-house	\$60,363	\$0	\$0	834	\$72	2,085	0.40	0.40	0.00	0.00
MDOT	MBRS	In-house	\$60,363	\$0	\$0	834	\$72	2,085	0.40	0.40	0.00	0.00
DHS	CDC/IVR	Outsource	\$428,006	\$0	\$193,125	418	\$1,024	209	2.00	0.00	0.00	2.00

# Applications Support

## DBMSs, Operating Systems, Languages

### Database Technology

#### Name (List all the DBMS in use)

SQL Server
FILEMAKER
ACCESS
ORACLE
Flat Files
Teradata
FoxPro
DB2
IDMS
IMS
UNISYS DMSII
POSTGRES
BLLIB
Indexed files (keyed I/O files)

### Operating Systems

#### Name (List all operating systems in use)

Windows XP
Windows Server 2003
Windows Server 2008
MCP
Unix - Sun Solaris
Windows 7
Windows Server 2008 R2
Teradata
Unix - HP
Unix - Linux
Windows NT
Linux-SUSE
Linux--Red Hat
BL/SOURCE, CANDE, BL/SCHED, BL/LIB
Novell

### Programming Languages

#### Name (List all Languages in use)

C#.Net
SQL
ASP.NET
FileMaker Scripts
Crystal Reports Scripts
Siebel
Visual Basic
Microfocus for COBOL
Cognos
Access
Active Reports
ASP
ASP.NET
Business Objects
COBOL
COM+
Crystal Reports
DTS
Foxpro
HTML
Java
JavaScript
Microsoft IIS
MS SQL Server
Oracle
Oracle Forms
Oracle SQL
PL SQL

### Programming Languages

#### Name (List all Languages in use)

Rbase
Script Unix
Unix Commands
unix shell scripts
VB Script
VB.NET
Visual Basic
XML
XSLT
PHP
PERL
Cold Fusion
SAS
Jquery
SSIS
AS/MET
ALGOL
DMALGOL
C++
Xgen
Python
CSS
Jquery(JS)
DELPHI
DOS
ABAP
PEOPLECODE

# Applications Support

## Testing Tools

Support / Testing Tools	Support / Testing Tools	Support / Testing Tools
Name (List all the Tools in use)	Name (List all the Tools in use)	Name (List all the Tools in use)
AbendaId	CORE - MultiBridge Administrator	Hisoftw are - Compliance Sherriff
Active PDF Generator	Coremetrics Analytics	HP Mercury
Adobe - Creative Suit, DreamWeaver, Flash Player, Flex, Flex	CPI - OpenFox, Operator 8	HP Quality Center
Adobe InDesign	Crystal Reports	Hyperion Reporting
Adobe Reader	CTC Bridge 32	IBM 31-BIT SDK FOR Z/OS, JAVA 2 TECHNOLOGY EDITION V
Adobe Web Premium CS5.5	CVS	IBM DEBUG TOOL FOR Z/OS
Ant	Cynergy - Application Enterprise Framework	IBM FAULT ANALYZER FOR Z/OS
ANT	Data Dynamics Active Reports	Information Builders - WebFocus, Developer Studio, Active R
App/Server/Network Vantage	Data Services - Address Cleansing	Infragistics 2006
ArcGis 9.3.1	DBA Tools by Stewart Data Tech	Insyte
ASG Zeke for batch job scheduling	DM Query	IRR-Name Search
BIRT	DreamWeaver	JasperReports Library
BL Sched	Eclipse	Jaspersoft
BL Source	Ektron eWebEditPro	Jave Studio
BLLib	Embarcadero - DB Artisan	JAWS Screen Reader
BLSched	Empirix	JBOSS
BLSource	ERGO	Jdevelopers
BNC Remedy	Erwin Data Modeler	Knowledge Xpert
BSI Tax Factory, WebSphere, Crystal RAS, IIS, Microfocus C	Fileaid	Lawson Business Intelligence
Business Objects	FileNet	Lawson System Foundation, Lawson Portal, Lawson Busine
Cande	Filezilla	LoadRunner
Cisco VPN Client	Genesys CC Pulse reporting	log4net
Clarity	Genesys Data Modeling Assistant	Microfocus for COBOL
Clear Case	Genesys Interaction Routing Designer	MS SQL server business Intelligence
Clear Quest	Genesys Studio (Java)	MS SQL Server Management studio
CompuWare performance monitoring tool	GNU	MyEclipse
Compuware Vantage	GOOGLE CHROME JAVA SCRIPT CONSOLE	nHibernate
Coms	Hibernate	NICE

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<b>Support / Testing Tools</b>
<b>Name (List all the Tools in use)</b>
Novell - IDM3, Access Manager
OEM Oracle Enterprise Manager
Oledb
Opalis
OpCon
OPUS
Oracle Developer Suite
Oracle Forms-Report-Designer and Repository
PerForce
Process Flow Designer, Process Flow Administrator, Process Flow Designer
Programmer's Workbench
PUTTY
QA Run/Load
Query Management Facility
Quest Tools - SQL Navigator
Quest Tools - TOAD for Oracle
RAD - Rational Application Developer
Rapid Application Development v8.0
Rational Software Modeler
Remote Desktop
RQM
RSA - Rational Software Architect
Rsync
SAP
SAS Enterprise BiServer
Security Administrator, Crystal Reports
Serena - ChangeMan
Serena - InfoMan

<b>Support / Testing Tools</b>
<b>Name (List all the Tools in use)</b>
Serina PVCS
SharePoint
Siebel Tools
SMC-Remote Desktop
Snagit
SOFT ARTISANS FILEUPEE
Spring
SQL Developer
SSH Client
Subversion
Sybase-EA Server
Sybase-PowerBuilder Foundation Class
Sybase-PowerDesigner
Team Track
Telerik
Tidal
Tivoli Directory Server, Bouncy Castle, Process Flow Connector
TOAD
Tomcat
Tortoise SVN
Tortoise SVN
Unistar
URSA (Admin)
View now - TCPIP software
Vignette Content Management Tools V6
Visual Source Safe
Visual Studio 2003- 2008
WebSphere Data Interchange for z/OS
WebSphere Studio
WINDBG
WinSCP
WINSPC3
WinSQL
WIRESHARK
Xpedit

## Contact Information

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